State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Mail Code – 401-02B
Water Pollution Management Element
Bureau of Surface Water Permitting
P.O. Box 420 – 401 E State St
Trenton, NJ 08625-0420
Phone: (609) 292-4860 / Fax: (609) 984-7938

BOB MARTIN
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7007 0220 0002 1034 6138

October 4, 2011

Daryl Harris, Director, Port Reading Refinery
Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095

Re: Draft Surface Water Renewal Permit Action
Category: B - Industrial Wastewater
NJPDES Permit No. NJ0028878
Hess Corporation - Port Reading Refinery
Woodbridge Township, Middlesex County

Dear Mr. Harris:

Enclosed is a **draft** New Jersey Pollutant Discharge Elimination System (NJPDES) permit action identified above which has been issued in accordance with N.J.A.C. 7:14A.

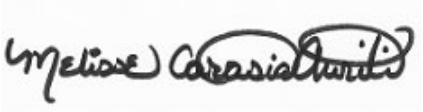
Notice of this draft permit action will appear in the *Home News Tribune* and also appeared in the September 21, 2011 *DEP Bulletin*. The *DEP Bulletin* is available on the internet at http://www.state.nj.us/dep/bulletin. In accordance with N.J.A.C. 7:14A-15.10(c)1i, the public comment period will close thirty days after its appearance in the newspaper.

As detailed in the *DEP Bulletin* and aforementioned newspaper, written comments or a request that the Department hold a non-adversarial public hearing on the draft document must be submitted in writing to Pilar Patterson, Chief, Mail Code 401-02B, Water Pollution Management Element, Bureau of Surface Water Permitting, P.O. Box 420, Trenton, NJ 08625-0420 by the close of the public comment period. All persons, including the applicant, who believe that any condition of this draft document is inappropriate or that the Department's tentative decision to issue this draft document is inappropriate, must raise all reasonable arguments and factual grounds supporting their position, including all supporting materials, during the public comment period.

The Department will respond to all significant and timely comments upon issuance of the final document. The permittee and each person who has submitted written comments will receive notice of the Department's final decision to issue, revoke, or redraft the document.

If you have questions or comments regarding the draft action, please contact Bela Mankad at (609) 292-4860.

Sincerely,



Melisse Carasia Auriti
Supervising Environmental Specialist
Bureau of Surface Water Permitting

Enclosures
c: Permit Distribution List
Masterfile #: 14854; PI #: 46052

Table of Contents

This permit package contains the items listed below:

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Surface Water Permitting

PUBLIC NOTICE

Notice is hereby given that the New Jersey Department of Environmental Protection (Department) proposes to issue the New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Surface Water (DSW) Permit NJ0028878 in accordance with N.J.A.C. 7:14A-1 et seq., and by authority of the Water Pollution Control Act at N.J.S.A. 58:10A-1 et seq., for the following discharge:

Applicant or Permittee	Facility
Hess Corporation 1 Hess Plaza Woodbridge, NJ 07095	Hess Corporation - Port Reading Refinery 750 Cliff Road Port Reading, Woodbridge Township, Middlesex County

This is a major permit renewal action for a petroleum refinery that manufactures, stores, and ships petroleum products at a current average refinery feed rate of 66,500 barrels per day (bbl/day). A long term average flow of 0.77 MGD of process wastewater, remediation wastewater, cooling tower blowdown, storage tank water bottoms, API sludge filtrate, equalization tank sludge filtrate/cleanout wastewater, stormwater, and petroleum-contaminated water from petroleum refining, storage, and distribution activities from other Hess and/or non-Hess owned facilities is treated and discharged via DSN 001C to the Arthur Kill, classified as SE3 waters.

Modification provisions as cited in the permit may be initiated in accordance with the provisions set forth in Part IV and upon written notification from the Department.

A draft NJPDES permit renewal has been prepared for this facility based on the administrative record which is on file at the offices of the Department, located at 401 East State Street, Trenton, New Jersey. It is available for inspection, by appointment, Monday through Friday, between 8:30 A.M. and 4:00 P.M. Appointments for inspection may be requested through the Open Public Records Act office. Details are available online at www.nj.gov/dep/opra, or by calling (609) 341-3121. Appointments for inspection of the NJPDES file only or requests for a copy of the draft document (for a nominal charge) may be made by calling Central File at (609) 292-0400.

Written comments or a request that the Department hold a non-adversarial public hearing on the draft document must be submitted in writing to Pilar Patterson, Chief, or Attention: Comments on Public Notice NJ0028878, at Mail Code 401-02B, Division of Water Quality, Bureau of Surface Water Permitting, P.O. Box 420, Trenton, NJ 08625-0420 by the close of the public comment period, which closes thirty calendar days after publication of this notice in the newspaper. All persons, including the applicant, who believe that any condition of this draft document is inappropriate or that the Department's decision to issue this draft document is inappropriate, must raise all reasonable arguments and factual grounds supporting their position, including all supporting materials, during the public comment period.

The Department will respond to all significant and timely comments upon issuance of the final document. The permittee and each person who has submitted written comments will receive notice of the Department’s permit decision.

Public Notice of Proposed Permit Actions (Division of Water Quality)

Permit: • ***Name*** • ***NJPDES No.*** • ***Type***	***Facility Location:*** • ***Address*** • ***County***	***NJDEP:*** • ***Case manager*** • ***Bureau*** • ***Phone No.***	***Receiving Discharge:*** • ***Stream or Formation or POTW*** • ***Stream Classification*** • ***Watershed***	***Executive Summary***
Hess Corporation - Port Reading Refinery NJ0028878 DSW Major	750 Cliff Road Port Reading (Woodbridge), NJ 07064 Middlesex County	Bela Mankad Bureau of Surface Water Permitting (609) 292-4860	Arthur Kill SE3 Rahway River / Woodbridge Creek	This is a major permit renewal action for a petroleum refinery that manufactures, stores, and ships petroleum products at a current average refinery feed rate of 66,500 barrels per day (bbl/day). A long term average flow of 0.77 MGD of process wastewater, remediation wastewater, cooling tower blowdown, storage tank water bottoms, API sludge filtrate, equalization tank sludge filtrate/cleanout wastewater, stormwater, and petroleum-contaminated water from petroleum refining, storage, and distribution activities from other Hess and/or non-Hess owned facilities is treated and discharged via DSN 001C to the Arthur Kill, classified as SE3 waters.

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

Permit Number: NJ0028878

Draft: Surface Water Renewal Permit Action

Permittee:

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095

Co-Permittee:

Property Owner:

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095

Location Of Activity:

Hess Corporation - Port Reading Refinery
750 Cliff Road
Port Reading (Woodbridge), Middlesex County

Authorization Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
B - Industrial Wastewater			

By Authority of:
Commissioner's Office

DEP AUTHORIZATION
Pilar Patterson, Chief
Bureau of Surface Water Permitting
Division of Water Quality

(Terms, conditions and provisions attached hereto)

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Surface Water Permitting

FACT SHEET

Masterfile #: 14854 **PI #:** 46052

This fact sheet sets forth the principle facts and the significant factual, legal, and policy considerations examined during preparation of the draft permit. This action has been prepared in accordance with the New Jersey Water Pollution Control Act and its implementing regulations at N.J.A.C. 7:14A-1 et seq. - The New Jersey Pollutant Discharge Elimination System.

PERMIT ACTION: Surface Water Renewal Permit Action

The permittee has applied for a New Jersey Pollutant Discharge Elimination System (NJPDES) Surface Water Renewal Permit Action through an application dated September 12, 2008.

1 Name and Address of the Applicant:

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095

2 Name and Address of the Facility/Site:

Hess Corporation - Port Reading Refinery
750 Cliff Road
Port Reading (Woodbridge), Middlesex County

3 Receiving Water Discharge Location Information:

A copy of the appropriate section of a United States Geological Survey (USGS) quadrangle map indicating the location of the facility and discharge point is included towards the end of this Fact Sheet.

Outfall Designator: 001C

General Information		Watershed Information	
Receiving Water:	Arthur Kill	Downstream Confluences:	Arthur Kill
Via :	Outfall pipe	Receiving River Basin:	NY/NJ Harbor Complex
Classification (a):	SE3	WMA (b):	07
Latitude:	40° 33’ 27.1”	Watershed:	Rahway River/Woodbridge Creek
Longitude:	74° 14’ 32.8”	Subwatershed:	Arthur Kill waterfront (below Graselli)
County:	Middlesex	HUC 14 (c):	02030104050120
Municipality:	Woodbridge	Water Quality Impairments (d):	Benzo(a)pyrene, Chlordane, DDD, DDE, DDT, Dieldrin, Dioxin, Heptachlor Epoxide, Hexachlorobenzene, Mercury, and Polychlorinated Biphenyls (PCBs)
Outfall Description			
Outfall Configuration:	multi-port diffuser	Submerged Pipe Characteristics:	The diffuser is 16 inches in diameter and extends approximately 30-50 feet offshore at mean low water. The average depth of the diffuser is approximately 10 feet.
Applicable Receiving Water Dilution Factors			
Acute :	22.4		
Chronic :	233		

Footnotes:

(a) The designated uses for this waterbody classification can be found at N.J.A.C. 7:9B-1.12.
(b) WMA = Watershed Management Area
(c) HUC 14 = 14 digit Hydrologic Unit Code
(d) These parameters are listed on Sublist 5 as impaired for this waterbody as per New Jersey's 2008 Integrated Water Quality Monitoring and Assessment Report (includes 305(b) Report and 303(d) List).

As per the Surface Water Quality Standards at N.J.A.C. 7:9B, the designated uses for the Saline Estuary 3 (SE3) receiving waters are:

1. Secondary contact recreation;
2 Maintenance and migration of fish populations;
3 Migration of diadromous fish;
4. Maintenance of wildlife; and
5. Any other reasonable uses.

As noted in Section 3 above, this segment of the Arthur Kill is impaired for Benzo(a)pyrene, Chlordane, DDT, DDD, DDE, Dieldrin, Dioxin, Heptachlor Epoxide, Hexachlorobenzene, Mercury, and Polychlorinated Biphenyls (PCBs).

In accordance with new regulations adopted at N.J.A.C. 7:14A-11.13 and 14.4, a major modification was issued to the existing permit in November 2007 to incorporate monitoring requirements for PCBs. Based on the results of this monitoring, the Department will make a determination if this facility will need to develop and implement a PCB Pollutant Minimization Plan (PMP).

Additionally, in accordance with N.J.A.C. 7:14A-13.5, in order to evaluate the applicability of WQBELs, the monitoring requirements for Benzo(a)pyrene, Chlordane, DDT, DDD, DDE, Dieldrin, Dioxin, Heptachlor Epoxide, Hexachlorobenzene, and Mercury are retained from the existing permit. Please see Section 6.B.15 for further details.

4 Facility Description:

The facility is classified as a major discharger by the Department of Environmental Protection (Department) in accordance with the United States Environmental Protection Agency (EPA) rating criteria. Based on Discharge Monitoring Report (DMR) data for the period of March 2007 to October 2010, the facility's estimated combined long term average flow is 0.77 million gallons per day (MGD) while the daily maximum flow is 2.6 MGD.

Hess Corporation operates the Port Reading Refinery under the Standard Industrial Classification (SIC) code 2911. The original refinery was built in 1958; the fluid catalytic cracking unit was added in 1961 and expanded in 1991; and a Low Sulfur Gas Unit was added in 2006. The primary purpose of the Port Reading Refinery is to manufacture, store, and ship quality petroleum products. Products manufactured at the facility include gasoline, #2 heating oil, #6 oil, refinery fuel gas, and liquefied petroleum gas. Normal butane is also manufactured, but it is not a finished product and goes to other processing facilities. The major refining processes at the refinery include fluid catalytic cracking, hydrotreating, and H2SO4 alkylation. Current average refinery feed rate is 66,500 barrels per day (bbl/day) of residual oil and vacuum gas oil to the fluid catalytic cracking unit.

The refinery operates an onsite wastewater treatment plant (plant) with a design capacity of 2.88 MGD and discharges continuously to the Arthur Kill via DSN 001C. Sources of intake water at the facility include the Middlesex Water Company public water supply, which is the primary source for all refinery operations, including the cooling towers; and the Arthur Kill, which is only used for the firewater system. Wastewater components that are treated at the plant include process wastewater, remediation wastewater, cooling tower blowdown, storage tank water bottoms, API sludge filtrate, and equalization tank sludge filtrate/cleanout wastewater. Additionally, all facility stormwater, consisting of stormwater runoff from refining facility process areas, storage and loading/unloading areas, DSN 002A water (stormwater runoff from parking and non-production equipment laydown areas) and DSN 005A water (stormwater and leachate from the No.1 Landfarm) is also treated at the plant. The treatment plant also receives petroleum-

contaminated water from petroleum refining, storage, and distribution activities from other Hess and/or non-Hess owned facilities. Occasionally, excess stormwater collected in aboveground storage tank secondary containment areas pumped to an onsite retention basin located on the southern side of the facility is also routed back for treatment at the plant. Wastewater treatment steps include hydraulic splitting, oil-water separation, equalization, activated sludge bioreaction, clarification, sand filtration, and carbon adsorption.

A schematic of the facility's treatment and a site plan of the facility are included at the end of the fact sheet.

Sludge is recycled, reclaimed, or disposed either off-site or on-site in a permitted platform.

Storm water discharges from DSNs 002A, 003A, 005A, 006A, 007A, and 008A are covered under NJPDES/DST permit number NJ0142549. However, stormwater flows from DSNs 002A and 005A are usually routed to the treatment plant; these outfalls only discharge untreated stormwater if excessive rainfall could potentially cause an overload of the treatment plant capacity. If there are any questions regarding the NJPDES DST permit, please contact the Bureau of Nonpoint Pollution Control at (609) 633-7021.

5 Type and Quantity of the Wastes or Pollutants:

The Permit Summary Table near the end of this fact sheet contains a summary of the quantity and quality of pollutants treated and discharged from the facility and the proposed effluent limitations.

6 Summary of Permit Conditions:

The proposed effluent limitations and other pertinent information regarding the draft permit are described below:

A. Basis for Effluent Limitations and Permit Conditions - General:

The effluent limitations and permit conditions in this permit have been developed to ensure compliance with the following, as applicable:

1. NJPDES Regulations (N.J.A.C. 7:14A),
2. New Jersey Surface Water Quality Standards (N.J.A.C. 7:9B),
3. New Jersey's 2008 Integrated Water Quality Monitoring and Assessment Report (includes 305(b) Report and 303(d) List),
4. Requirements of the Interstate Environmental Commission (N.J.A.C. 7:9B-1.5(b)2),
5. Existing permit limitations in accordance with N.J.A.C. 7:14A-13.19 and 40 CFR 122.44 (antibacksliding requirements),
6. Permit limitations in accordance with N.J.A.C. 7:9B-1.5(d) (antidegradation requirements),
7. Statewide Water Quality Management Planning Rules (N.J.A.C. 7:15),
8. Sludge Quality Assurance Regulations (N.J.A.C. 7:14C),
9. Technology Based Treatment Requirements or Effluent Limitation Guidelines Requirements (N.J.A.C. 7:14A-13.2 to 13.4)

In accordance with N.J.A.C. 7:14A-13.5, Water Quality Based Effluent Limitations (WQBELs) are imposed when it has been determined that the discharge of a pollutant causes an excursion of criteria specified in the New Jersey Surface Water Quality Standards (SWQS), N.J.A.C. 7:9B-1.1 et seq., and the Federal Water Quality Standards, 40 CFR Part 131. WQBELs are authorized by Section 301 of the Clean Water Act, 40 CFR 122, N.J.S.A. 58:10A-4, and N.J.A.C. 7:14A-13.2 and 13.3. The procedures used to develop WQBELs are contained in the State and Federal Standards. Specific procedures, methodologies, and equations are contained in the current USEPA "Technical Support Document for Water Quality-based Toxics Control" (TSD) (EPA- 505/2-90-001) and are referenced in N.J.A.C. 7:14A-13.5 and 13.6.

Expression of all effluent limitations is in accordance with N.J.A.C. 7:14A-13.14 and 13.15.

Whole effluent toxicity is expressed as a minimum as percent effluent.

Technology based limitations are authorized by Section 301 of the Clean Water Act, 40 CFR 122, N.J.S.A. 58:10A-4, and N.J.A.C. 7:14A-13.2(a)1.ii., 13.3(b), and 13.4. In general, technology based effluent limitations are based on Effluent Limitation Guidelines (ELGs), developed by the United States Environmental Protection Agency (USEPA), or on case-by-case limitations developed through a Best Professional Judgment (BPJ) analysis in cases where ELGs are not available or appropriate. ELGs are minimum technology based requirements applicable on a nation-wide basis and are published in 40 CFR Subchapter N. ELGs consider the category of industry that produce common pollutants taking into account the specific factors unique to a particular type of industry (manufacturing process, type and quantity of pollutants generated, types of treatment facilities available to treat the pollutants, etc.). In cases where ELGs are applicable for surface water dischargers, ELG loading limitations are calculated using the specified concentration value and the production information provided by the permittee. BPJ determinations are authorized by Section 402 (a) (1) of the Clean Water Act.

Description of Applicability under the Effluent Limitation Guidelines:

The ELGs for the Petroleum Refining Point Source Category (40 CFR Part 419) classify refineries into five basic subcategories based on the types of products manufactured and the processes used at the facility. These subcategories and their descriptions of applicability are as follows:

Subpart A - Topping Subcategory: - This subpart applies to discharges resulting from the manufacture of petroleum products by topping, catalytic reforming and any additional refinery processes other than thermal processes (coking, vis-breaking, etc.) or catalytic cracking.

Subpart B - Cracking Subcategory: - This subpart applies to discharges resulting from the manufacture of petroleum products by topping, cracking and any additional refinery processes other than the processes specified in Subparts C, D or E.

Subpart C - Petrochemical Subcategory: - This subpart applies to discharges resulting from the manufacture of petroleum products by topping, cracking, petrochemical operations and any additional refinery processes other than the processes specified in Subparts D or E. "Petrochemical operations" shall mean the production of second-generation petrochemicals (i.e. alcohols, ketones, cumene, styrene, etc.) or first generation petrochemicals and isomerization products (i.e. BTX, olefins, cyclohexane etc.) where 15 percent or more of refinery production is first-generation petrochemicals and isomerization products.

Subpart D - Lube Subcategory: - This subpart applies to discharges resulting from the manufacture of petroleum products by topping, cracking, and lube oil manufacturing processes operations and any additional refinery processes other than the processes specified in Subpart E.

Subpart E - Integrated Subcategory: - This subpart applies to discharges resulting from the manufacture of petroleum products by topping, cracking, petrochemical operations, lube oil manufacturing and any other refinery process.

The major refining processes (as itemized in Appendix A of 40 CFR Part 419) at the Port Reading Refinery include Fluid Catalytic Cracking, Hydrotreating, and H2SO4 alkylation. Therefore, based on the above classification criteria, wastewater from the Port Reading Refinery is regulated under the ELGs of the Petroleum Refining Point Source Category, Subpart B-Cracking Subcategory (40 CFR 419.20-27).

Production Based Loading Limitations:

The applicable ELGs at 40 CFR Part 419.20-27 specify procedures to calculate production-based loading limitations for several pollutants commonly found in process wastewater at petroleum refineries. These pollutants include BOD_5, COD, TSS, Oil and Grease, Ammonia-Nitrogen, Total Recoverable Chromium, Hexavalent Chromium, Total Recoverable Phenolics and Total Sulfides. The referenced ELGs also allow credit for some

pollutants present in contaminated stormwater that is treated through the treatment plant. These ELGs are applied at the treatment levels indicated in the table below:

Pollutants	**Treatment Levels**			
	Process Wastewater		Contaminated Stormwater	
BOD_5	BPT	**BCT**	BPT	**BCT**
Total Suspended Solids	BPT	**BCT**	BPT	**BCT**
COD*	BPT	**BAT**	BPT	**BAT**
Oil and Grease	BPT	**BCT**	BPT	**BCT**
Ammonia-Nitrogen	BPT	**BAT**	--	--
Sulfide	BPT	**BAT**	--	--
Phenolic Compounds	BPT	**BAT**	BPT	**BAT**
Total Chromium	BPT	**BAT**	BPT	**BAT**
Hexavalent Chromium	BPT	**BAT**	BPT	**BAT**
pH	BPT	**BCT**	BPT	**BCT**

BPT - Best Practicable control Technology currently available, based on 40 CFR 419.22
BAT - Best Available control Technology economically achievable, based on 40 CFR 419.23
BCT - Best Conventional pollutant control Technology, based on 40 CFR 419.24

*As authorized by 40 CFR 419.23 (f), when the chloride ion concentration in the effluent exceeds 1000 mg/L, the Department may substitute TOC as a parameter in lieu of COD, where the TOC limitations may be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5. Therefore, based on the brackish nature of the effluent stream, TOC limitations were included in lieu of COD limitations in the existing and previous permits for this facility. Since the BOD_5 limitations are based on the BCT level of treatment, TOC limitations are also based on the BCT level of treatment.

For the conventional pollutants, **BOD_5, TSS, Oil and Grease and pH**, if both BPT and BCT ELGs are available, **BCT** limitations are applied. For **Ammonia, COD, Sulfides, Phenolic Compounds, Total Chromium, and Hexavalent Chromium**, if both BPT and BAT ELGs are available, **BAT** limitations are applied. The applicable ELGs are shown in **Bold** in the table above. However, based on guidance provided in the EPA document titled "Guide for the Application of Effluent Limitations Guidelines for the Petroleum Refining Industry" dated June 1985, BCT and BAT limitations cannot be less stringent than the BPT limitations. Therefore, in all cases, the more stringent of the BPT, BCT or BAT limitations are applied. The calculation procedure for the limitations based on BPT, BAT and BCT levels of treatment is included in Table A at the end of the fact sheet.

In the existing permit, these limitations were based on an average refinery feedstock rate of 54,000 bbl/day. For this permit renewal, the permittee has informed the Department through e-mail correspondence dated February 24, 2011 from Eric Haas, Process Engineer at the Port Reading Refinery, that the current refinery feedstock rate is 66,500 bbl/day. Furthermore, a new hydrotreating unit that is used to manufacture low sulfur gas (a finished product at the refinery) was added in 2006. The current feedstock rate to this unit is 18,000 bbl/day. Hydrotreating is included in the list of processes in Appendix A to 40 CFR 419, which is used to determine BAT effluent limitations for Total Chromium, Hexavalent Chromium, and Phenolic Compounds.

Therefore, production based limitations have been calculated based on the higher current average refinery feedstock rate and taking into account the additional process allocation (Hydrotreater/Low Sulfur Gas Unit), where applicable. As a result, the newly calculated limitations for BOD_5, TOC, TSS, Oil and Grease, Ammonia-Nitrogen, Total Recoverable Chromium, Hexavalent Chromium, Total Recoverable Phenolics and Total Sulfides are higher than the limitations specified in the existing permit.

Antidegradation/Antibacksliding Analysis: In accordance with 40 CFR 122.44(l)(2)(i)(A), a permit renewal may contain less stringent effluent limitations if material and substantial alterations or additions to the permitted facility occurred after permit issuance which would justify the application of a less stringent effluent limitation. This is

considered to be one of the exceptions to the provisions of 40 CFR 122.44(l)2, which require limits imposed in a permit renewal to be at least as stringent as those in an existing permit.

In order to satisfy the federal and state anti-degradation regulations at 40 CFR 131.12 and N.J.A.C. 7:9B-1.5(d), the Department evaluated the necessity for WQBELs for these pollutants. A review of the DMR data indicates that Chromium and Hexavalent Chromium are consistently not detected in the effluent; Ammonia and Phenols are not found to be discharged at levels approaching the existing effluent limitations. Additionally, concentration limitations have been retained for BOD_5, TOC, TSS, and Oil and Grease in this permit renewal, which further assures that the discharge of these pollutants does not result in degradation of the receiving waters.

Although the production based limitations in this permit renewal are based on a slightly higher average refinery feed rate than that used to calculate limits in the existing permit, the long term average flow treated and discharged (0.77 MGD) is well within the design capacity (2.88 MGD) of the treatment plant. Therefore, the resulting effluent loading values are still expected to remain within the levels historically permitted at the facility. Furthermore, since the available dilution in the Arthur Kill at the point of discharge is significant (acute dilution factor of 22.4 and chronic dilution factor of 233), this increase in permitted loadings is not expected to cause degradation of the receiving water.

Treated Stormwater Credit:

The ELGs at 40 CFR 419 provide credit for the pollutants **BOD_5, TSS, Oil and Grease, Total Recoverable Phenolics, Total Chromium, Hexavalent Chromium and COD** in contaminated stormwater which may be discharged after the application of the appropriate BCT or BAT levels of treatment.

As authorized by 40 CFR Part 419.23(f) and 40 CFR Part 419.24(e), if contaminated stormwater is commingled or treated with process wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff times the Effluent Limitation Factors listed in the table below:

Contaminant	CF_{max} (kg/m^3)	CF_{avg} (kg/m^3)
BCT limitation factors (1):		
BOD_5	0.048	0.026
TSS	0.033	0.021
Oil & Grease	0.015	0.008
TOC*	0.106 (0.048 x 2.2)	0.057 (0.026 x 2.2)
BAT limitation factors (1):		
Total Phenols	0.00035	0.00017
Total Chromium	0.00060	0.00021
Hexavalent Chromium	0.000062	0.000028
COD*	0.360	0.180

Notes:

(1) The Effluent Limitation Factors (kg/m^3) for BOD_5, TSS, and Oil and Grease are found at 40 CFR 419.24 (e); and those for Total Phenols, Total Chromium, and Hexavalent Chromium are found at 40 CFR 419.23 (f).

* As authorized by 40 CFR 419.23 (f), when the chloride ion concentration in the effluent exceeds 1000 mg/L, the Department may substitute TOC as a parameter in lieu of COD, where the TOC limitations may be established at a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5. Therefore, based on the brackish nature of the effluent stream, TOC limitations were included in lieu of COD limitations in the existing and previous permits for this facility.

The additional allocation is incorporated by using equations to calculate the reported mass discharge values for these pollutants. Consequently, effluent limitations for these parameters remain unchanged; however, credit for pollutants in treated stormwater is applied for compliance purposes. Since the ELGs only provide credit for

treated stormwater, the permittee shall monitor the stormwater flow routed through the treatment plant. Furthermore, this credit is only applicable when stormwater treatment coincides with the day of sampling for the affected pollutants. Stormwater credit is calculated using the following equations:

$$M_c = M_m - (CF_{max})\ (SW)$$
$$A_r = A_m - (CF_{avg})\ (SW_{avg})$$

where:

- M_m Measured maximum mass discharge rate (kg/day)
- CF_{max} Correction Factor for maximum limit (kg/m^3)
- SW Stormwater flow (m^3/day) treated at the wastewater treatment on the day of sampling for parameters with stormwater credit.
- M_c Maximum mass discharge rate (kg/day) calculated using the equation above to provide credit for treated stormwater.
- A_m Monthly average mass discharge rate (kg/day), computed as the sum of M_m values in the reporting period/number of days sampled for that specified monitoring period
- CF_{avg} Correction Factor for monthly average limit (kg/m^3)
- SW_{avg} Monthly average stormwater flow (m^3/day) is the sum of stormwater values for days when treatment of contaminated stormwater coincides with sampling for the parameters with stormwater credit, divided by the number of such days.
- A_r Average mass discharge rate (kg/day) calculated using the equation above to provide credit for treated stormwater.

Please note that the permittee must convert their stormwater flow from MGD to m^3/day.

Stormwater flow routed through the treatment plant shall be reported under the sample point, "Precipitation." For pollutants with stormwater credit allowance, actual measured effluent values shall be reported on the DMR forms under the sample point, "Effluent Gross Value"; mass of pollutants in stormwater calculated by multiplying the stormwater flow routed through the treatment plant on the day of sampling by the effluent limitation factors specified at 40 CFR Part 419.23(f) and 40 CFR Part 419.24(e) shall be reported under the sample point, "Precipitation"; and effluent compliance shall be determined at the sample point, "Effluent Net Value," which is calculated by subtracting the mass of pollutants in stormwater (Precipitation) from the measured mass of pollutants in the effluent (Effluent Gross Value).

Please see Part IV, Section G.2 for further details.

B. <u>Basis and Derivation for Effluent Limitations and Monitoring Requirements- Specific</u>:

Except for an increase in the production based loading limitations for pollutants covered under the Petroleum Refining ELGs as explained in Section 6A above, and Acute Whole Effluent Toxicity, as explained in Section B.14, this permit action does not authorize any increase in the concentration or loading of pollutants above those levels authorized under the existing permit. All other permit limitations and conditions in this permit action are equal to or more stringent than those contained in the existing permit action. As a result, this permit action satisfies the federal and state anti-degradation regulations at 40 CFR 131.12 and N.J.A.C. 7:9B-1.5(d), and no further anti-degradation analysis is necessary.

Monitoring frequencies and sample types are in accordance with N.J.A.C. 7:14A-14, unless specified otherwise in the permit. In accordance with N.J.A.C. 7:14A-14.2, the permittee may submit a written request for a modification of the permit to decrease monitoring frequencies for non-limited parameters listed in Part III if site specific conditions indicate the applicability of such a modification.

1. <u>Flow</u>: This permit action does not include a numerical limitation for flow. Monitoring conditions are applied pursuant to N.J.A.C. 7:14A-13.13. The monitoring frequency shall be **continuous** and the sample type shall be **metered**.

Due to the inclusion of stormwater credit for several pollutants, monitoring conditions are also applied for stormwater flow and the number of rain days. These values shall be reported on the monthly DMRs under the parameters "Flow Rate" and "Duration of Discharge" respectively, where the sample point is specified as "Precipitation".

2. 5-Day Biochemical Oxygen Demand (BOD_5): The existing permit specifies concentration limitations of a monthly average of 30 mg/L and a daily maximum of 50 mg/L. These limits were originally imposed in previous permits for the facility prior to the 1995 permit renewal. These limits are consistent with the effluent quality requirements of the Interstate Environmental Commission's Water Quality Regulations, Section 2.05(c). Since these limitations have been historically included in the permit, they are retained in the permit renewal in accordance with N.J.A.C. 7:14A-13.19. Loading limitations are based on the ELGs at 40 CFR 419, Subpart B and are calculated as shown in Table A at the end of the Fact Sheet. These limitations are a monthly average of 187 kg/day and a daily maximum of 338 kg/day.

   The existing permit specifies a monitoring frequency of one per month. However, based on the nature of the facility's operations, and several exceedances of the daily maximum concentration and loading values as seen in the DMR data, the monitoring frequency has been increased to **two per month** in the permit renewal. The sample type shall be a **composite** sample.

3. Total Organic Carbon (TOC): The existing permit specifies concentration limitations of a monthly average of 66 mg/L and a daily maximum of 110 mg/L. These limitations were originally imposed in previous permits for the facility prior to the 1995 permit renewal. As noted in Section 6.A of the Fact Sheet, the ELGs at 40 CFR 419.23(f) contain production based loading limitations for the related parameter, COD. It also includes a provision for the substitution of COD by TOC, where the TOC limitations imposed in the permit are based on a ratio of 2.2 to 1 to the applicable effluent limitations for BOD_5. Although this regulation specifies applicable loading limitations, it was also used as a basis to calculate and include concentration limitations for TOC in previous permits. Thus, based on the BOD_5 concentration limitations of a monthly average of 30 mg/L and a daily maximum of 50 mg/L, TOC concentration limitations of a monthly average of 66 mg/L (30 x 2.2) and a daily maximum of 110 mg/L (50 x 2.2) were included in the permit. Since these limitations have been historically included in the permit, they are retained in the permit renewal in accordance with N.J.A.C. 7:14A-13.19. Loading limitations are based on the ELGs at 40 CFR 419, Subpart B and are calculated as shown in Table A at the end of the Fact Sheet. These limitations are a monthly average of 411 kg/day and a daily maximum of 743 kg/day.

   Based on the existing permit, the monitoring frequency shall be **one per week** and the sample type shall be a **composite** sample.

4. Total Suspended Solids (TSS): The existing permit specifies concentration limitations of a monthly average of 30 mg/L and a daily maximum of 50 mg/L that were originally imposed in previous permits for the facility prior to the 1995 permit renewal. These limits are consistent with the effluent quality requirements of the Interstate Environmental Commission's Water Quality Regulations, Section 2.05(d). Since these limitations have been historically included in the permit, they are retained in the permit renewal in accordance with N.J.A.C. 7:14A-13.19. Loading limitations are based on the ELGs at 40 CFR 419, Subpart B and are calculated as shown in Table A at the end of the Fact Sheet. These limitations are a monthly average of 151 kg/day and a daily maximum of 234 kg/day.

   Based on the existing permit, the monitoring frequency shall be **one per week** and the sample type shall be a **composite** sample.

5. pH: The effluent limitations a minimum of 6.0 Standard Units (SU) and a maximum of 9.0 SU are retained from the existing permit in accordance with N.J.A.C. 7:14A-13.19. These limitations are based on the ELGs at 40 CFR 419, Subpart B and are also consistent with the effluent quality requirements of the Interstate Environmental Commission's Water Quality Regulations, Section 2.05(a).

Based on the existing permit, the monitoring frequency shall be **two per day**. In accordance with N.J.A.C. 7:14A-14.2, and based on the existing permit, the sample type shall be a **grab** sample.

6. Temperature: The daily maximum limitation of 35 degrees centigrade is retained from the existing permit in accordance with N.J.A.C 7:14A-13.19. The monitoring requirement for the monthly average has also been retained from the existing permit.

   Based on the existing permit, the monitoring frequency shall be **two per day**. In accordance with N.J.A.C. 7:14A-14.2, and based on the existing permit, the sample type shall be a **grab** sample.

7. Oil and Grease: The existing permit specifies concentration and loading limitations for the related parameter, "Petroleum Hydrocarbons." The concentration limitations of a monthly average of 10 mg/L and an instantaneous maximum of 15 mg/L for Petroleum Hydrocarbons are based on the effluent standards for Oil and Grease at N.J.A.C. 7:14A-12.8(c) and were originally imposed prior to the 1995 permit renewal. In accordance with N.J.A.C. 7:14A-12.8(f), if a direct discharger only discharges petroleum based oil and grease, the Department may specify in the permit that compliance with the oil and grease effluent standard may be monitored using the Petroleum Hydrocarbons analytical method. Based on the nature of the facility's discharge, which is Petroleum Hydrocarbons based, concentration limitations were specified for Petroleum Hydrocarbons instead of Oil and Grease. Furthermore, loading limitations were also specified for the same parameter and were based on the ELGs for Oil and Grease at 40 CFR 419, Subpart B.

   However, since the above cited regulations specify Oil and Grease as the regulated parameter, the Department has determined that concentration and loading limitations are more appropriately applied to the parameter Oil and Grease in this permit renewal. Based on the nature of the wastewater being treated, the analytical test method used shall be the appropriate EPA approved test method at 40 CFR 136 that measures the Petroleum Hydrocarbon fraction of Oil and Grease. Inclusion of effluent limitations for the parameter, Oil and Grease vs. Petroleum Hydrocarbons is also consistent with the requirement imposed in permits for other petroleum refineries.

   Based on N.J.A.C. 7:14A-12.8(c), and in accordance with N.J.A.C. 7:14A-13.19, the concentration limitations of a monthly average of 10 mg/L and an instantaneous maximum of 15 mg/L are retained in this permit renewal. Loading limitations are based on the ELGs at 40 CFR 419, Subpart B and are calculated as shown in Table A at the end of the Fact Sheet. These limitations are a monthly average of 54 kg/day and a daily maximum of 101 kg/day.

   The existing permit specifies a monitoring frequency of 4 times per week. Review of the DMR data indicates that except for one excursion of the daily maximum concentration limitation (one data point of 15.7 mg/L), the permittee is consistently meeting the Oil and Grease limitations. Therefore, consistent with the monitoring frequency specified for this parameter in other petroleum refinery permits, the monitoring frequency has been reduced to **one per week** in the permit renewal. In accordance with N.J.A.C. 7:14A-14.2, and based on the existing permit, the sample type shall be a **grab** sample.

8. Ammonia (Total as N): Loading limitations are based on the ELGs at 40 CFR 419, Subpart B and are calculated as shown in Table A at the end of the Fact Sheet. These limitations are a monthly average of 102 kg/day and a daily maximum of 225 kg/day.

   Based on the existing permit, the monitoring frequency shall be **one per week** and the sample type shall be a **composite** sample.

9. Sulfide: Loading limitations are based on the ELGs at 40 CFR 419, Subpart B and are calculated as shown in Table A at the end of the Fact Sheet. These limitations are a monthly average of 0.98 kg/day and a daily maximum of 2.16 kg/day.

   Based on the existing permit, the monitoring frequency shall be **one per week** and the sample type shall be a **composite** sample.

10. Total Recoverable Phenolics: Loading limitations are based on the ELGs at 40 CFR 419, Subpart B and are calculated as shown in Table A at the end of the Fact Sheet. These limitations are a monthly average of 1.2 kg/day and a daily maximum of 2.52 kg/day.

    Based on the existing permit, the monitoring frequency shall be **one per week** and the sample type shall be a **composite** sample.

11. Total Chromium: Loading limitations are based on the ELGs at 40 CFR 419, Subpart B and are calculated as shown in Table A at the end of the Fact Sheet. These limitations are a monthly average of 1.71 kg/day and a daily maximum of 4.93 kg/day. Monitoring requirements for monthly average and daily maximum concentration are also retained from the existing permit.

    In accordance with N.J.A.C. 7:14A-14.2(c), since DMR data has consistently been non-detectable for this pollutant, the monitoring frequency of one per week in the existing permit has been reduced to **one per month** in the permit renewal. In accordance with N.J.A.C. 7:14A-14.2, the sample type shall be a **composite** sample.

12. Hexavalent Chromium: Loading limitations are based on the ELGs at 40 CFR 419, Subpart B and are calculated as shown in Table A at the end of the Fact Sheet. These limitations are a monthly average of 0.14 kg/day and a daily maximum of 0.32 kg/day. Monitoring requirements for monthly average and daily maximum concentration are also retained from the existing permit.

    In accordance with N.J.A.C. 7:14A-14.2(c), since DMR data has consistently been non-detectable for this pollutant, the monitoring frequency of one per week in the existing permit has been reduced to **one per month** in the permit renewal. In accordance with N.J.A.C. 7:14A-14.2, the sample type shall be a **composite** sample.

13. Total Recoverable Nickel: The existing permit specifies loading limitations of a monthly average of 2.3 kg/day and a daily maximum of 6.4 kg/day. These limitations were originally imposed in previous permits for the facility prior to the 1995 permit renewal. Based on effluent data and available dilution in the receiving water, Nickel is not found to be discharged at levels that would cause or have reasonable potential to cause an exceedance of the SWQS. However, since these limitations have been historically included in the permit, they are retained in this permit renewal in accordance with the antibacksliding requirements at N.J.A.C. 7:14A-13.19 and 40 CFR 122.44 and the antidegradation requirements of N.J.A.C. 7:9B-1.5(d). Monitoring requirements for monthly average and daily maximum concentration are also retained from the existing permit.

    Based on consistent compliance with the limits, the monitoring frequency of one per week in the existing permit has been reduced to **one per month** in the permit renewal. In accordance with N.J.A.C. 7:14A-14.2, the sample type shall be a **composite** sample.

14. Whole Effluent Toxicity (WET): Section 101(a) of the Clean Water Act (CWA) establishes a national policy of restoring and maintaining the chemical, physical and biological integrity of the Nation's waters. In addition, section 101(a)(3) of the CWA and the State's SWQS at N.J.A.C. 7:9B-1.5(a)4 state that the discharge of toxic pollutants in toxic amounts is prohibited. Further, 40 CFR 122.44(d) and N.J.A.C. 7:14A-13.6(a) require that where the Department determines using site-specific WET data that a discharge causes, shows a reasonable potential to cause, or contributes to an excursion above the SWQS, the permitting authority must establish effluent limits for WET. In order to satisfy the requirements of the CWA, the State's SWQS and the NJPDES Regulations, the need for a WQBEL for WET was evaluated for this discharge.

    In order to determine the need for a WET WQBEL, the Department has analyzed all available WET effluent data. In general, an acceptable data set consists of, at a minimum, 10 data values including the most recent 2½ years of data collection. The existing permit specifies semi-annual monitoring requirements for acute WET. After review of the applicable data set, acute WET was found in quantifiable amounts in the effluent. Therefore, further analyses have been conducted for acute WET.

Cause Analysis:

A cause analysis was conducted in accordance with N.J.A.C. 7:14A-13.5. When the maximum effluent value (in toxic units) exceeds the applicable site specific wasteload allocation (in toxic units), the discharge is shown to cause an exceedance of the SWQS.

Using the steady state mass balance equation, acute and chronic wasteload allocations of 6.723 TU_as and 233 TU_cs respectively, were developed utilizing the narrative criteria for toxic substances (general) specified in the SWQS at N.J.A.C. 7:9B, and acute and chronic dilution factors of 22.41 and 233 respectively, from the dilution study dated August 1990, titled "Critical Instream Waste Concentration Study for Amerada Hess (Port Reading) Corporation" and submitted by IT Corporation. Consistent with the recommendations of section 2.3.3 of the TSD, values of 0.3 acute toxic unit (TU_a) and 1.0 chronic toxic unit (TU_c) were used to interpret the narrative water quality criteria for WET contained at N.J.A.C. 7:9B-1.14(c) (see Response to Comments 13-74 through 13-89, 29 NJR 1861, (May 5, 1997)).

Effluent data for the time period of May 2004 through November 2010 was utilized for this analysis.

Review of the acute WET data set indicates the maximum effluent data value to be 1.56 TU_as (i.e. an LC50 = 64 %). Since the maximum reported effluent data value does not exceed the applicable site specific wasteload allocation of 6.72 TU_as, the discharge does not cause an exceedance of the acute interpretation of the narrative criteria for WET identified in the SWQS.

Reasonable Potential to Cause:

A reasonable potential to cause analysis was conducted in accordance with N.J.A.C. 7:14A-13.5. When the projected maximum effluent value (in toxic units) exceeds the applicable site specific wasteload allocation (in toxic units), the discharge is shown to have reasonable potential to cause or contribute to an exceedance of the SWQS. The projected maximum effluent value was calculated utilizing the procedures specified in section 3.0 of the TSD.

For this analysis, the acute reasonable potential multiplying factor (R.P.M.F.) of 1.504 was based on the 15 data values, a default coefficient of variation (CV) of 0.6, a 95% confidence level and a 95% probability basis (refer to Table 3.1 of the TSD). Multiplying the R.P.M.F with the maximum data value of 1.56 TU_as from the above cause analysis results in a projected maximum data value of 2.35 TU_as. Since the projected maximum data value does not exceed the applicable site specific wasteload allocation of 6.72 TU_as, the discharge does not have reasonable potential to cause an exceedance of the acute interpretation of the narrative criteria for WET identified in the SWQS.

Water Quality Based Effluent Limitation Derivation:

Since the discharge was not found to cause or have reasonable potential to cause an exceedance of the acute interpretation of the narrative criteria for WET identified in the SWQS, no new WQBELs have been calculated in the permit renewal.

However, the existing permit specifies an acute WET limit of an LC50 $\geq$ 50%, which was originally based on the state minimum effluent standard at N.J.A.C. 7:14A-5.3 (a). On January 5, 2009, the New Jersey Pollutant Discharge Elimination System (NJPDES) Rules were readopted. This readoption repealed N.J.A.C. 7:14A-5.3(a), which contained the state minimum effluent standard for acute WET, and instead adopted an acute WET action level of LC50 $\geq$ 50% at N.J.A.C. 7:14A-13.18(f). Therefore, the existing and effective acute WET limitation of LC50$\geq$50% is being replaced with an acute WET action level of LC50$\geq$50% in this permit renewal. Monitoring and reporting will be required to determine whether the discharge causes, shows a reasonable potential to cause, or contributes to an excursion above the SWQS.

Imposing an action level for acute WET will be equally protective of water quality as an effluent limit in this circumstance, since the violation of either the WET limitation or the action level carries with it the same enforceable permit condition to initiate the Toxicity Reduction and Implementation Requirements (TRIR), in order to correct the toxicity problem should this value be exceeded. As a result, the Department anticipates there will be no change in water quality as a result of this change. The Department believes that this change, specifically because it includes the TRIR provisions, satisfies the antibacksliding provisions at N.J.A.C. 7:14A-13.19, which incorporate Section 402(o)3 of the Federal Clean Water Act because it includes the TRIR provisions. Specifically, Section 402(o)3 prohibits the revision of an effluent limit "if the implementation of such limitation would result in a violation of a water quality standard." In this circumstance, violation of either the numerically identical action level or an effluent limitation will trigger an enforceable permit condition to conduct a TRIR in order to address or prevent a violation of a water quality standard.

The TRIR are included in accordance with N.J.A.C. 7:14A-13.17(a), 7:14A-6.2(a)5 and the recommendations in Section 5.8 of the TSD. The requirements are necessary to ensure compliance with the applicable WET action level and to expedite compliance with the WET action level should exceedances occur. As included in section B.1 of the TRIR requirements, the initial step of the TRIR is to identify the variability of the effluent toxicity and to verify that a consistent toxicity problem does in fact exist.

The test species method to be used for acute testing shall be the *Mysidopsis bahia* 96 hour definitive test. Such selection is based on the saline characteristics of the receiving stream, the existing permit, N.J.A.C. 7:9B-1.5 and N.J.A.C. 7:18, the Regulations Governing the Certification of Laboratories and Environmental Measurements (N.J.A.C. 7:18).

Effluent samples for conducting **acute WET** testing are to be collected after the last treatment step, consistent with the collection location for all other parameters. Based on the existing permit, the monitoring frequency shall be **semi-annual** and the sample type shall be a **composite** sample.

20. Toxic Metals, Organic Compounds, and Cyanide: In accordance with N.J.A.C. 7:14A-13.6(a), a WQBEL shall be imposed when the Department determines pursuant to N.J.A.C. 7:14A-13.5 that the discharge of a pollutant causes an excursion above a SWQS. The SWQS at N.J.A.C. 7:9B specify acute and chronic criteria for the protection of aquatic life as well as human health criteria in saline waters for several toxic pollutants including Acids, Base/Neutrals, Metals, Pesticides, and Volatiles.

    In order to determine the need for toxic pollutant specific WQBELs, the Department has analyzed all available effluent data. Acceptable data sets generally consist of, at a minimum, 10 data values including the most recent 2½ years of data collection. A pollutant is considered discharged in “quantifiable amounts” when an exact amount of that pollutant is measured equal to or above the detection level reported by a laboratory analysis (refer to the latest version of the “NJPDES Monitoring Report Form Reference Manual,” which can be accessed at http://www.state.nj.us/dep/dwq/pdf/MRF_Manual.pdf).

    The existing permit specifies quarterly and semi-annual monitoring requirements for these pollutants. Methyl tert-butyl ether (MTBE), Benzene, Toluene, Ethylbenzene, and Xylenes are monitored on a quarterly basis; Antimony, Arsenic, Barium, Beryllium, Cadmium, Copper, Cyanide, Lead, Manganese, Mercury, Selenium, Silver, Thallium, Zinc, Acids, Base/Neutrals, Pesticides, and Volatiles are monitored on a semi-annual basis.

    Based on a review of these data sets, the Department has concluded the following:

    - Antimony, Barium, Beryllium, Cadmium, Copper, Lead, Mercury, Silver, Thallium, Acids, Base/Neutrals, Pesticides, and Volatiles were not found to be discharged in quantifiable amounts in the effluent. Therefore, no further analyses were conducted for these pollutants. However, monitoring and reporting requirements have been retained in this permit action based on N.J.A.C. 7:14A-13.5(k)3 and the need to re-evaluate the necessity for WQBELs upon renewal of the permit.

- MTBE was found to be discharged in quantifiable amounts in most of the sampling results. Additionally, Xylenes were found to be discharged in quantifiable amounts in some of the sampling results. At the present time, there are no saline SWQS for MTBE or Xylenes; therefore, no further analyses were conducted for these pollutants. However, MTBE and Xylenes are found to be consistently present in gasoline products; therefore, monitoring requirements have been retained in this permit action based on N.J.A.C. 7:14A-13.5(k)3 and the need to re-evaluate the necessity for WQBELs upon renewal of the permit.

- Manganese was found to be discharged in quantifiable amounts in all sampling results. Additionally, Benzene, Ethylbenzene, and Toluene were found to be discharged in quantifiable amounts in some of the sampling results. However, based on effluent data, available dilution, and the criteria, none of these pollutants are discharged at levels that would cause or have reasonable potential to cause an excursion above the SWQS. Therefore, further analyses were not conducted for these pollutants. However, Benzene, Ethylbenzene, and Toluene are found to be consistently present in gasoline products; therefore, monitoring and reporting requirements have been retained in this permit action based on N.J.A.C. 7:14A-13.5(k)3 and the need to re-evaluate the necessity for WQBELs upon renewal of the permit.

- Zinc was found to be discharged in quantifiable amounts in all sampling results. Additionally, Cyanide and Selenium were found to be discharged in quantifiable amounts in most of the sampling results and Arsenic was found to be discharged in quantifiable amounts in some of the sampling results. Therefore, further analyses were conducted for these pollutants.

Quantified Pollutant Analysis Methodology:

For each pollutant discharged in quantifiable amounts in the effluent, a cause analysis was conducted using the procedures specified in the TSD in accordance with N.J.A.C. 7:14A-13.5. The cause analysis consists of a comparison between the pollutant's maximum effluent concentration value (or average value of a long term data set in the case of criteria with an averaging period longer than one year) and the pollutant's applicable site specific wasteload allocation.

Using the steady state mass balance equation, wasteload allocations were developed utilizing the applicable SWQS and dilution factors from the August 1990 Dilution Study. The applied SWQS for Arsenic, Selenium and Zinc are based on a water effect ratio (WER) of 1.0.

For the applicable metals (Arsenic, Selenium and Zinc), default translators were utilized to convert total recoverable data to its dissolved equivalent for the cause analyses for aquatic criteria, and, if applicable, to convert the dissolved long term averages to total recoverable values for determining WQBELs. The default metal translators used in the analyses are based on the conversion factors for dissolved metals at 40 CFR Part 131 and N.J.A.C. 7:14A-13.6(c) and are listed below:

Metal	Saline Water	
	Translator (acute)	Translator (chronic)
Arsenic	1.000	1.000
Selenium	0.998	0.998
Zinc	0.946	0.946

Quantified Pollutant Analysis Results:

Cause analyses were conducted for Arsenic, Cyanide, Selenium and Zinc. As a result of the cause analyses, none of the pollutants were found to cause an excursion of the SWQS. Since the discharge of Arsenic, Cyanide, Selenium and Zinc in the permittee's effluent was not found to cause an excursion of the SWQS, WQBELs are not proposed for these pollutants at this time. However, monitoring and reporting requirements have been retained in this permit action based on N.J.A.C. 7:14A-13.5(k)3 and the need to re-evaluate the

necessity for WQBELs upon renewal of the permit. Refer to Table A at the back of the Fact Sheet for a summary of the effluent limitation analyses for these pollutants.

Monitoring Frequencies:

Based on effluent data, the SWQS for these pollutants, the nature of the facility's operations, and the characteristics of the receiving water, the proposed monitoring frequencies for these pollutants, including any changes from the existing permit requirements are summarized in the following table:

Parameters	Existing Monitoring Frequencies	Proposed Monitoring Frequencies
MTBE, Benzene, Ethlylbenzene, Toluene, Xylenes	Quarterly	Semi-Annual
Zinc	Semi-Annual	Semi-Annual
Tertiary Butyl Alcohol (TBA)*	--	Semi-Annual
Antimony, Arsenic, Beryllium, Cadmium, Copper, Cyanide, Lead, Manganese, Mercury, Selenium, Silver, Thallium, Acids, Base/Neutrals, Pesticides, and Volatiles	Semi-Annual	Annual

* The existing permit does not include any monitoring requirements for TBA. However, TBA is a byproduct of MTBE metabolism and is a contaminant of concern in gasoline products. Therefore, consistent with the monitoring requirement included in permits for other petroleum refineries, a monitoring requirement for TBA is included in this permit renewal.

In satisfying the recommendations of Section 3.1 of the TSD, it is the Department's position that the specified monitoring frequencies will provide sufficient up-to-date data to re-evaluate the necessity for WQBELs upon renewal of the permit.

Sample types:

In accordance with N.J.A.C. 7:14A-14.2, the sample type shall be a **24 hour composite** for the **Metals, Acids, Base/Neutrals, Pesticides, and Asbestos**, and shall be a **grab** sample for **Cyanide** and **Volatiles**. Consistent with the intent of 40 CFR 122.45(c) and N.J.A.C. 7:14A-13.14(b), monitoring data for toxic metals shall be expressed as total recoverable.

C. Recommended Quantitation Levels Policy (RQLs):

The Department developed the RQLs to insure that useful data is provided to the Department in order to characterize the discharger's effluent. The Department recommends that the permittee achieve detection levels that are at least as sensitive as the RQLs found in Part III. The Department has determined that the quantitation levels listed therein can be reliably and consistently achieved by most state certified laboratories for most of the listed pollutants using the appropriate procedures specified in 40 CFR Part 136. FAILURE TO ATTAIN A QUANTITATION LEVEL AS SENSITIVE AS A LISTED RQL IS NOT A VIOLATION OF THE PERMIT, BUT DOES TRIGGER SOME ADDITIONAL REPORTING REQUIREMENTS FOR THE PERMITTEE AS SPECIFIED IN PART IV OF THE PERMIT.

D. Reporting Requirements:

All data requested to be submitted by this permit shall be reported on the Discharge Monitoring Reports (DMRs), Waste Characterization Reports (WCR), and Residual Transfer Reports (RTR) as appropriate and submitted to the Department as required by N.J.A.C. 7:14A-6.8(a).

E. General conditions:

In accordance with N.J.A.C. 7:14A-2.3 and 6.1(b), specific rules from the New Jersey Administrative Code have been incorporated either expressly or by reference in Part I and Part II.

F. Operator Classification Number:

The operator classification requirement is no longer included in the permit. To obtain or determine the appropriate licensed operator classification for the treatment works specified, the permittee shall contact the Bureau of Construction Management and TWA/CSO Permitting at (609) 984-4429.

G. Flow Related Conditions:

This facility is located in the area covered by the Lower Raritan/Middlesex Water Quality Management Plan.

H. Residuals/Sludge Conditions:

Analysis of the industrial sludge for most of the parameters found on Table III-B-1 of Part III is required because they were detected in previous self reported sludge quality monitoring data submitted to the Department under the Sludge Quality Assurance Regulations (N.J.A.C. 7:14C) or are otherwise expected to be present in the sludge generated at the facility. MTBE and Xylenes were found to be discharged in quantifiable amounts in the discharge sampling results. Therefore, MTBE, Xylene, and Tertiary Butyl Alcohol (TBA, a by-product of MTBE degradation) have been added to the Residuals DMR. The frequency of monitoring is dependent on the amount of sludge produced. Since the amount of sludge generated is less than 290 dry metric tons per year the frequency of monitoring is annually.

The Department has determined that it is appropriate to reduce the number of parameters and the amount of information being reported on the Annual Residual Waste Characterization Report (WCR). The information previously required by the Annual WCR can be obtained from the Residuals Transfer Report. The requirement to prepare and submit the new Annual WCR with reduced reporting parameters starts the calendar year after this permit becomes effective.

All treatment works with a discharge regulated under N.J.A.C. 7:14A must have permits that implement applicable technical standards for residuals management. Generally, the permit issued to the treatment works generating the residual will include applicable residual quality monitoring as well as other general conditions required by N.J.A.C. 7:14A-6. In addition, the permit may include conditions related to any aspect of residual management developed on a case-by-case basis where the Department determines that such conditions are necessary to protect public health and the environment.

The permit may also include conditions establishing requirements for treatment works that send residual to other facilities for final use or disposal. Thus, **ALL** residual preparers (that is, generators as well as persons who manage the residual) are required to submit basic information concerning their residual use and disposal practices. This basic information is submitted by compliance with the Sludge Quality Assurance Regulations (N.J.A.C. 7:14C).

The documents listed below have been used to establish the residual conditions of the Draft Permit:

a. United States Environmental Protection Agency “Standards for the use or disposal of sewage sludge” (40 CFR Part 503),
b. "New Jersey Pollutant Discharge Elimination System” (N.J.A.C. 7:14A),
c. Technical Manual for Residuals Management, May 1998,

d. USEPA Part 503 Implementation Guidance, EPA 833-R-95-001, October 1995. This document is a compilation of federal requirements, management practices and EPA recommended permit conditions for sewage sludge use and management practices,
e. USEPA A Plain English Guide to the EPA Part 503 Biosolids Rule, EPA/832/R-93/003, September 1994,
f. New Jersey "Statewide Sludge Management Plan", January 2006 and
g. New Jersey "Sludge Quality Assurance Regulations" (SQAR), N.J.A.C. 7:14C.

I. Biocides or Other Cooling Water Additives:

The Department has approved the permittee's request to use the following corrosion inhibitors, biocides, or other cooling water additives in its non-contact cooling water:

- Sulfuric Acid, Nalco 3DT-191, Nalco 3DT-199, Nalco 3DT-192, Nalco 3DT-184, Stabrex ST70, Nalco 7330, Optimer 7128, Nalco-8365, Nalco-23101, Nalco-7384, Nalco-7308, Sodium Hypochlorite, Inhibited Hydrochloric Acid, Soda Ash, Nalco-73282, Nalco-73286, Nalco-73281, Nalco-73199, Nalco-73550, Nalprep 2578, Nalprep 8349, EC9078A, Nalco Core Shell 71301, Nalco Core Shell 71303, Nalco 3DT197, Caustic, Nalco 2584, T 1826, Nalco 1720, Hydrogen Peroxide, Nalco 22310, and Nalco 7290E.

If the permittee would like to use other additives in the future that are chemically similar in nature, the permittee shall only be required to notify the Bureau of Surface Water Permitting prior to their use. This notification shall consist of all relevant information, including Material Safety Data Sheets and applicable aquatic toxicity data. However, if the permittee would like to use other additives that are chemically different from the above listed, the permittee shall notify this Bureau at least 180 days prior to use so that the permit may be reopened to incorporate any additional limitations and/or monitoring requirements deemed necessary.

J. Polychlorinated Biphenyl (PCB) Sampling and Pollutant Minimization Plan (PMP) Requirements:

The permittee has completed sampling for PCBs as required in a previous permit action. The Department is currently reviewing the sampling data for this and other facilities to determine which facilities are discharging at more elevated levels. Once the Department completes this review and if the permittee's effluent is discharging PCBs at more elevated levels, the Department will require the permittee to develop and submit a PMP for approval within 12 months from the effective date of the permit action the requirement is incorporated in.

The Department has developed a PMP Technical Manual to help permittees with the development of the PMP, which can be found on the Department's web site at http://www.state.nj.us/dep/dwq/techman.htm.

If based on the monitoring for PCBs, it is determined that the permittee must develop and implement a PCB PMP, the permittee will be required to submit an Annual PMP Progress Report. These reports will be used to update the Department regarding any revisions to the PMP, measures taken to achieve reductions, and changes to the baseline loading.

These conditions have been incorporated into the permit at Part IV, Section D.

7 Variances to Permit Conditions:

To date, the Department has not received a variance request from the permittee.

Procedures for modifying a WQBEL are found in the State SWQS, N.J.A.C. 7:9B-1.8 and 1.9. If a WQBEL has been proposed in this permit action, the permittee may request a modification of that limitation in accordance with N.J.A.C. 7:14A-11.7(a). This request must be made prior to the close of the public comment period. The information that must be submitted to support the request may be obtained from the Bureau of Water Quality Standards and Assessment at (609) 777-1753.

8 Description of Procedures for Reaching a Final Decision on the Draft Action:

Please refer to the procedures described in the public notice that is part of the draft permit. The public notice for this permit action is published in the *Home News Tribune* and in the DEP Bulletin.

9 Contact Information

If you have any questions regarding this permit action, please contact Bela Mankad, Bureau of Surface Water Permitting at (609) 292-4860.

10 Calculation Equations:

A. Wasteload Allocation: $WLA = C_i \times Df - C_{up}(Df - 1)$

where,
- WLA = wasteload allocation
- C_i = instream surface water criteria (from N.J.A.C. 7:9B)
- C_{up} = upstream concentration
- Df = dilution factor

B. Long Term Average: $LTA = (WLA) \times [WLA\ multiplier\ (LTA)]$

where,
- LTA = long term average
- WLA = wasteload allocation
- WLA multiplier (LTA) = wasteload allocation multiplier for long term average, the 99th percentile multiplier, (see Table 5-1 in TSD, page 102)

C. Maximum Daily Limitation: $MDL = (LTA) \times [LTA\ multiplier\ (MDL)]$

where,
- MDL = maximum daily limitation
- LTA = long term average
- LTA multiplier (MDL) = long term average multiplier for the maximum daily limitation , the 99th percentile multiplier, (see Table 5-2 in TSD, page 103)

D. Average Monthly Limitation: $AML = (LTA) \times [LTA\ multiplier\ (AML)]$

where,
- AML = average monthly limitation
- LTA = long term average
- LTA multiplier (AML) = long term average multiplier for the average monthly limitation, the 99th percentile multiplier, (see Table 5-2 in TSD, page 103)

11 Permit Summary Table

Unless otherwise noted, all effluent limitations are expressed as maximums. Dashes (--) indicate there is no effluent data, no limitations, or no monitoring for this parameter depending on the column in which it appears.

PARAMETER	UNITS	AVERAGING PERIOD	WASTEWATER DATA 1/2007 - 10/2010	EXISTING LIMITS	FINAL LIMITS
Flow	MGD	Monthly Avg. Daily Max.	0.77 2.6	MR MR	MR MR
Flow - Rainfall	MGD	Monthly Avg. Daily Max.	0.17 2.4	MR MR	MR MR
Duration of Discharge - Rain	# of days	Monthly Total	11	MR	MR
Effluent Temperature	°C	Monthly Avg. Daily Max.	26.4 36.1	MR 35	MR 35
Effluent pH	S.U.	Instant Min. Instant Max.	6.1 11.2	6.0 9.0	6.0 9.0
5 Day Biochemical Oxygen Demand (BOD_5) Effluent Gross	kg/d	Monthly Avg. Daily Max.	61.4 452.4	MR MR	MR MR
5 Day Biochemical Oxygen Demand (BOD_5) Effluent Gross	mg/L	Monthly Avg. Daily Max.	19.1 143.5	30 50	30 50
5 Day Biochemical Oxygen Demand (BOD_5) Effluent Net*	kg/d	Monthly Avg. Daily Max.	57.1 452.4	113 275	187 338
Total Organic Carbon (TOC) Effluent Gross	kg/d	Monthly Avg. Daily Max.	44.4 347.2	MR MR	MR MR
Total Organic Carbon (TOC) Effluent Gross	mg/L	Monthly Avg. Daily Max.	15.1 97.9	66 110	66 110
Total Organic Carbon (TOC) Effluent Net*	kg/d	Monthly Avg. Daily Max.	31.2 347.2	249 603	411 743
Total Suspended Solids (TSS) Effluent Gross	kg/d	Monthly Avg. Daily Max.	36.7 2644	MR MR	MR MR
Total Suspended Solids (TSS) Effluent Gross	mg/L	Monthly Avg. Daily Max.	12.5 855	30 50	30 50
Total Suspended Solids (TSS) Effluent Net*	kg/d	Monthly Avg. Daily Max.	31.2 2644	113 190	151 234
Oil and Grease Effluent Gross	kg/d	Monthly Avg. Instant Max.	9.0 56.9	MR MR	MR MR
Oil and Grease Effluent Gross	mg/L	Monthly Avg. Instant Max.	2.73 15.7	10 15	10 15
Oil and Grease Effluent Net*	kg/d	Monthly Avg. Instant Max.	6.35 56.9	43.8 81.7	54 101
Ammonia (Total as N) Effluent Gross	kg/d	Monthly Avg. Daily Max.	24.1 88.4	75 164	102 225
Sulfide Effluent	kg/d	Monthly Avg. Daily Max.	0.54 17	0.72 1.62	0.98 2.16
Total Chromium Effluent Gross	kg/d	Monthly Avg. Daily Max.	<0.022 - <0.065 <0.022 - <0.065	MR MR	MR MR
Total Chromium Effluent Gross	ug/L	Monthly Avg. Daily Max.	<10 <10	MR MR	MR MR
Total Chromium Effluent Net*	kg/d	Monthly Avg. Daily Max.	-0.19 - <0.056 -0.19 - <0.056	1.13 3.26	1.71 4.93
Total Chromium Effluent Net*	ug/L	Monthly Avg. Daily Max.	<10 <10	MR MR	MR MR
Chromium, Hexavalent Effluent Gross	kg/d	Monthly Avg. Daily Max.	<0.022 - <0.065 <0.022 - <0.065	MR MR	MR MR
Chromium, Hexavalent Effluent Gross	ug/L	Monthly Avg. Daily Max.	<10 <10	MR MR	MR MR
Chromium, Hexavalent Effluent Net*	kg/d	Monthly Avg. Daily Max.	<0.014 - <0.056 <0.022 - <0.057	0.094 0.21	0.14 0.32
Chromium, Hexavalent Effluent Net*	ug/L	Monthly Avg. Daily Max.	<10 <10	MR MR	MR MR
Total Recoverable Phenolics Effluent Gross	kg/d	Monthly Avg. Daily Max.	0.05 1.7	MR MR	MR MR
Total Recoverable Phenolics Effluent Net*	kg/d	Monthly Avg. Daily Max.	0.03 1.7	0.9 1.84	1.2 2.52
Nickel, Total Recoverable	kg/d	Monthly Avg. Daily Max.	0.29 2.1	2.3 6.4	2.3 6.4
Nickel, Total Recoverable	ug/L	Monthly Avg. Daily Max.	98.8 1080	MR MR	MR MR
Acute Toxicity, LC50	% Effluent	Minimum	63.7 - >100 (1)	≥50	MR (2)

Footnotes and Abbreviations:

MR Monitor and report only

*Net limitations are calculated as shown in Section 6A on page 7 of the Fact Sheet.

(1) Acute WET data set covers the time period from May 2004 to November 2010.
(2) The permittee shall maintain acute WET levels under the Action Level of LC50≥ 50%.

12 Contents of the Administrative Record

The following items are used to establish the basis of the Draft Permit:

Rules and Regulations:

1. 33 U.S.C. 1251 et seq., Federal Water Pollution Control Act. [C]
2. 40 CFR Part 131, Federal Water Quality Standards. [A] [C]
3. 40 CFR Part 122, National Pollutant Discharge Elimination System. [C]
4. N.J.S.A. 58:10A-1 et seq., New Jersey Water Pollution Control Act. [A] [B]
5. N.J.A.C. 7:14A-1 et seq., New Jersey Pollutant Discharge Elimination System Regulations. [A] [B]
6. N.J.A.C. 7:9B-1 et seq., New Jersey Surface Water Quality Standards. [A] [B]
7. N.J.A.C. 7:15, Statewide Water Quality Management Planning Rules. [A] [B]
8. N.J.A.C. 7:14C, Sludge Quality Assurance Regulations. [B]
9. Interstate Environmental Commission Regulations, N.J.S.A. 32:18-1 et seq.

Guidance Documents / Reports:

1. "Field Sampling Procedures Manual", published by the NJDEP. [A]
2. "NJPDES Monitoring Report Form Reference Manual", updated December 2007, and available on the web at http://www.state.nj.us/dep/dwq/pdf/MRF_Manual.pdf.
3. "EPA Technical Support Document for Water Quality-based Toxics Control", EPA/505/2-90-001, March 1991. [A]
4. New Jersey's 2008 Integrated Water Quality Monitoring and Assessment Report (includes 305 (b) Report 303(d) List). [A] [B]
5. Standard Compliance Inspection Reports for inspections conducted 6/15/04, 4/6/05, 3/13/06, 3/7/07, 3/13/06, 3/7/07, 3/4/08, 2/24/09, 2/2/10, and 2/3/11.
6. Affirmative Defense Reviews conducted 7/8/08 and 5/28/08. [A]
7. Dilution Study dated August 1990, titled "Critical Instream Waste Concentration Study for Amerada Hess (Port Reading) Corporation" and submitted by IT Corporation.

Permits / Applications:

1. NJPDES/DSW Permit Application dated September 12, 2008. [A]
2. Existing NJPDES/DSW Permit NJ0028878, issued December 31, 2003 and effective March 1, 2004. [A]
3. Major Modification to NJPDES/DSW Permit NJ0028878, issued October 19, 2007 and effective December 1, 2007 to incorporate monitoring requirements for PCBs. [A]
4. Minor Modification to NJPDES/DSW Permit NJ0028878, issued March 29, 2005 and effective on March 1, 2005 to authorize the use of new treatment chemicals in non-contact cooling water. [A]
5. Minor Modification to NJPDES/DSW Permit NJ0028878, issued April 6, 2006, and effective on April 1, 2006 to authorize the use of new treatment chemicals in non-contact cooling water. [A]
6. Previous NJPDES/DSW Permit NJ0028878, issued June 30, 1995 and effective August 1, 1995. [A]

Correspondences:

1. Cooling tower additive approval granted in e-mails dated 9/16/2010 and 3/23/2011.

Meetings / Site Visits:

1. Site Visit on February 22, 2011.

Footnotes:

[A] Denotes items that may be found in the NJPDES/DSW Administrative Record Library located in the NJDEP Central File Room, 401 East State Street, Trenton, New Jersey.

[B] Denotes items that may be found on the New Jersey Department of Environmental Protection (NJDEP) website located at "http://www.state.nj.us/dep/".

[C] Denotes items that may be found on the United States Environmental Protection Agency (USEPA) website at "http://www.epa.gov/".

Limitation Derivation Worksheets: Calculation of Technology Based Limitations using the Petroleum Refining Effluent Limitation Guidelines

40 CFR Part 419.20 Subpart B - Cracking Subcategory

1. Calculation Procedure for the derivation of BPT/BCT limitations for BOD_5, TOC, TSS, Oil and Grease; BPT level of treatment for Phenolics, Total Chromium, and Hexavalent Chromium; and BPT and BAT levels of treatment for Ammonia and Sulfide:

   In accordance with 40 CFR 419.22, 23 and 24(a), any existing point source subject to these subparts must achieve the effluent limitations specified in the tables in these sections. Furthermore, these limits are to be multiplied by the Size Factor and Process Factor specified in the tables at 40 CFR 419.22, 23 and 24(b)(1) and (2). This calculation procedure is illustrated in the table at the end of this section.

   In accordance with 40 CFR 419.22, 23 and 24(b)(1), based on a current Refinery Feedstock Rate (RFR) of 66,500 bbl/day, the corresponding **Size Factor (SF) is 1.04**.

   As illustrated in the example calculation at 40 CFR 419.42(b)(3), the Process Factor (PF) is based on the Total Process Configuration Factor, which in turn is calculated by adding the weighted unit process configuration factors of the unit processes operational at this refinery that are included in the flow model described in Section IX, Pages 148-151 of the Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category, EPA 440/1-74-014-a, April 1974 (1974 Flow Model). Unless specifically authorized by the USEPA, refinery unit processes other than those listed in this section may not be used to calculate the applicable technology based limitations.

   Based on information provided in e-mails dated February 24 and 25, 2011 by Eric Haas, Process Engineer at the Port Reading Refinery, the processes operational at the refinery and their current plant throughput rates are as follows:

   Fluid Catalytic Cracking feed (Residual Oil + Vacuum Gas Oil) = 66,500 bbl/day (10572 m^3/day)
   Sulfuric Acid Alkylation feed = 7,500 bbl/day (1192 m^3/day)
   Hydrotreating = 18,000 bbl/day (2861 m^3/day)

Operational Processes	Capacity (1000 m^3/day)	Capacity Relative To Throughput	Weighting Factor (1)	Unit Process Configuration Factor
Cracking:				
Fluid Catalytic Cracking	10.57	1.0	6	6.0
Hydrotreating (2)	2.86	0.27	0	0.0
Total Cracking:				**6.0**
Alkylation:				
H2SO4 Alkylation (2)	1.19	0.11	0	**0.0**
Total Refinery Process Configuration				**6.0**

Footnotes:

(1) Weighting Factors for the individual processes operational at the refinery are specified in the 1974 Flow Model and are also included in the example calculation at 40 CFR 419.42(b)3.
(2) Although Hydrotreating and H2SO4 Alkylation are operational at this refinery, these processes were not included in the 1974 Flow Model that was used to develop the weighting factors; therefore, the weighting factors for these processes were given a value of 0 and they do not affect the calculated value for the Total

Refinery Process Configuration that is used to determine the BPT and BCT limitations for all regulated parameters and BAT limitations for Ammonia (as N), sulfide (as S) and COD.

In accordance with 40 CFR 419.22, 23 and 24(b)(2):

Process Factor for the calculated Total Process Configuration of 6.0 = **1.09.**

In accordance with 40 CFR 419.22, 23 and 24(a), and as illustrated in the example at 40 CFR 419.42(b)(3), to calculate the limits in kilograms per 1000 m^3 of feedstock for each parameter, multiply the effluent limitations specified at 40 CFR 419.22, 23 and 24(a) by the Size Factor (SF) of 1.04 and Process Factor (PF) of 1.09.

Therefore, effluent limits/1000m^3 of feedstock = (Limits) x (SF) x (PF)
Final Production Based Limitations/day = (RFR) x (Limits) x (SF) x (PF)

Since the Refinery Feedstock Rate (RFR) is 66,500 bbl/day (10,572 m^3/day)
Final Production Based Limitations/day = (10.57x1000) x (Limits in kg/1000m^3) x (SF) x (PF)

Pollutant	Limits max/day kg/1000 m^3	Limits 30 day avg. kg/1000 m^3	SF	PF	RFR 1000 m^3/day	Production Based Limitation Max/day (kg/day)	Production Based Limitation 30 day avg. (kg/day)
BPT/BCT (1)							
BOD_5	28.2	15.6	1.04	1.09	10.57	338	187
TOC	62.0	34.3	1.04	1.09	10.57	743	411
TSS	19.5	12.6	1.04	1.09	10.57	234	151
O&G	8.4	4.5	1.04	1.09	10.57	101	54
BPT/BAT (2)							
Ammonia	18.8	8.5	1.04	1.09	10.57	225	102
Sulfide	0.18	0.082	1.04	1.09	10.57	2.16	0.98
BPT							
Phenolic Compounds	0.21	0.10	1.04	1.09	10.57	2.52	1.2
Total Chromium	0.43	0.25	1.04	1.09	10.57	5.15	3.00
Hexavalent Chromium	0.035	0.016	1.04	1.09	10.57	0.42	0.19

Footnotes:

(1) BPT and BCT effluent limitations for these parameters are identical
(2) BPT and BAT effluent limitations for these parameters are identical

Since the effluent limitations for BPT and BCT levels of treatment specified at 40 CFR 419.22(a) and 24(a) respectively are identical, the final calculated BPT and BCT limitations for BOD5, TSS, and Oil and Grease are the same numerical values. Similarly, the effluent limitations for BPT and BAT levels of treatment specified at 40 CFR 419.22 and 23(a) are identical; therefore, the final calculated BPT and BAT limitations for COD, Ammonia and Sulfide are the same numerical values.

2. Calculation Procedure for the derivation of BAT limitations for Phenolic Compounds, Total Chromium and Hexavalent Chromium:

In accordance with 40 CFR 419.23(c)(1)(i), BAT limits for Phenolic Compounds, Total Chromium and Hexavalent Chromium are the sum of the products of each effluent limitation factor listed in 40 CFR 419.23(c)(1)(i) times the applicable process feedstock rate. Applicable production processes are included in Appendix A to 40 CFR 419 and

are based on the Refined Flow Model described in the Development Document (Final) for Effluent Limitations Guidelines and Standards for the Petroleum Refining Point Source Category, EPA 440/1-82/014, October 1982.

The three processes operational at the refinery, namely Fluid Catalytic Cracking, Hydrotreating of final product, and Sulfuric Acid Alkylation are included in the list of processes in the aforementioned document. Therefore, the final effluent limitations for Total Phenolics, Total Chromium, and Hexavalent Chromium are calculated as follows:

[(Effluent Limitation Factor) x (Cracking Process Feedstock Rate)] + [(Effluent Limitation Factor) x (Alkylation Process Feedstock Rate)]

Where the Cracking Process Feedstock Rate = Fluid Catalytic Cracking Feedstock Rate (10572 m^3/day) + Hydrotreating Feedstock Rate (2861 m^3/day), which is 13,433 m^3/day;

And the Alkylation Process Feedstock Rate = the Sulfuric Acid Alkylation Feedstock Rate (1192 m^3/day).

Pollutant and Operational Processes	Process Feedstock Rate (1000 m^3/day)	Effluent Limitation Factor max/day kg/1000 m^3 of feedstock	Production Based Limits **Daily Max.** (kg/day)	Effluent Limitation Factor 30 day avg. kg/1000 m^3 of feedstock	Production Based Limits 30 day avg. (kg/day)
Phenolic Compounds					
Cracking Processes	13.433	0.419	5.628	0.102	1.37
Alkylation processes	1.192	0.377	0.449	0.092	0.11
Final BAT Limit for **Phenolic Compounds**			**Total = 6.08 kg/day**		**Total = 1.48 kg/day**
Total Chromium					
Cracking Processes	13.433	0.340	4.567	0.118	1.585
Alkylation processes	1.192	0.305	0.364	0.106	0.126
Final BAT Limit for **Total Chromium**			**Total = 4.93 kg/day**		**Total = 1.71 kg/day**
Hexavalent Chromium					
Cracking Processes	13.433	0.0218	0.293	0.0098	0.132
Alkylation processes	1.192	0.0196	0.023	0.0088	0.010
Final BAT Limit for **Hexavalent Chromium**			**Total = 0.32 kg/day**		**Total = 0.14 kg/day**

Comparing the BPT and BAT limits for Phenolic Compounds, Total Chromium and Hexavalent Chromium:

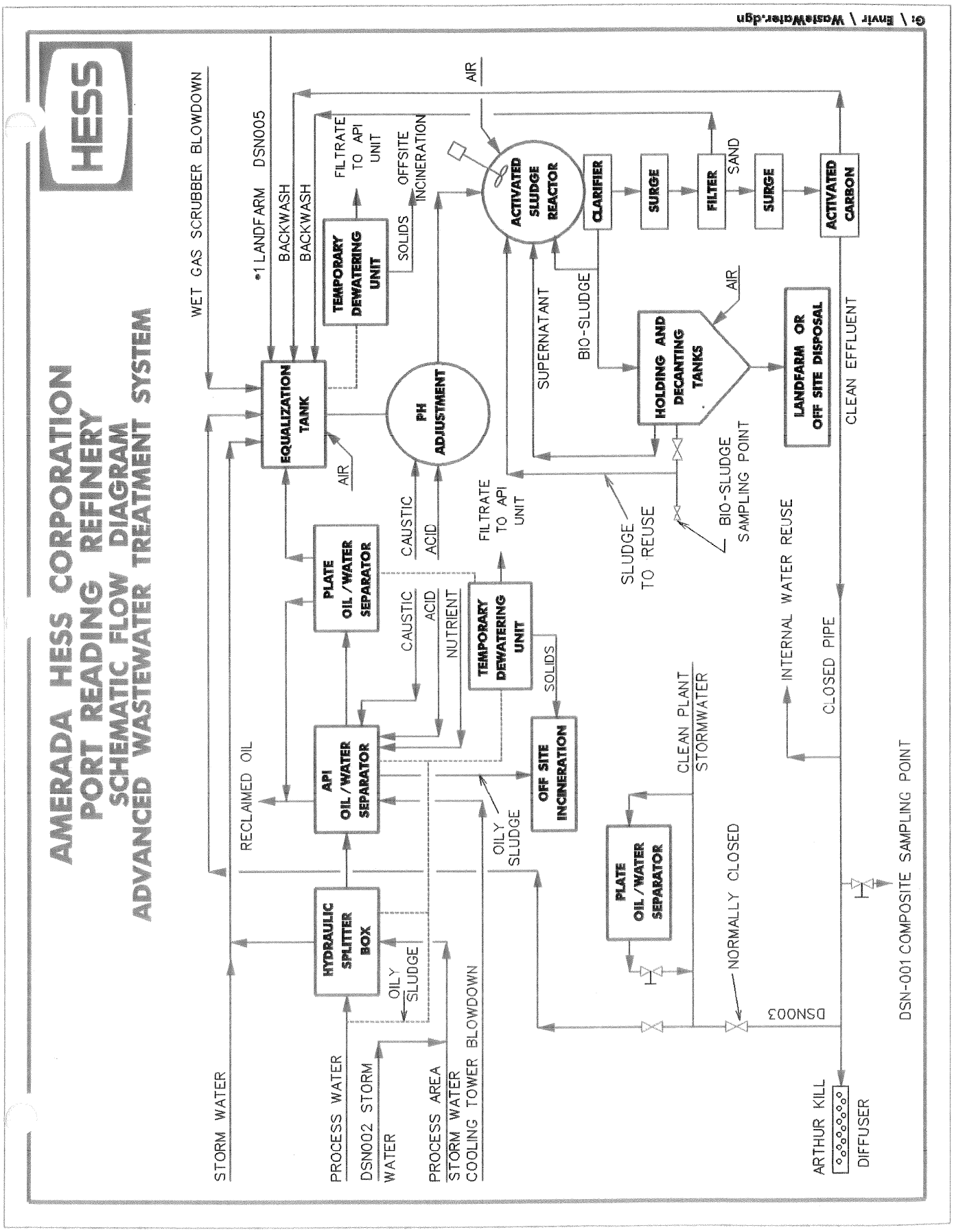
Limits (1)	Phenolic Compounds	Phenolic Compounds	Total Chromium	Total Chromium	Hexavalent Chromium	Hexavalent Chromium
	Daily Max	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max	Monthly Avg.
BAT limits	6.08	1.48	**4.93**	**1.71**	**0.32**	**0.14**
BPT limits	**2.52**	**1.2**	5.15	3.00	0.42	0.19

Footnotes:

(1) Limits are in kg/day. Applicable technology based limitations (BAT or BPT) are shown in **Bold** in the table above.

Arthur Kill NY-NJ USGS Topographic Map

0 1,750 3,500 7,000 Feet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AMERADA HESS CORPORATION
PORT READING REFINERY
SCHEMATIC FLOW DIAGRAM
ADVANCED WASTEWATER TREATMENT SYSTEM
HESS
WET GAS SCRUBBER BLOWDOWN
*1 LANDFARM DSN005
BACKWASH
BACKWASH
FILTRATE TO API UNIT
OFFSITE INCINERATION
AIR
TEMPORARY DEWATERING UNIT
SOLIDS
ACTIVATED SLUDGE REACTOR
CLARIFIER
SURGE
FILTER
SAND
SURGE
ACTIVATED CARBON
EQUALIZATION TANK
AIR
PH ADJUSTMENT
SUPERNATANT
BIO-SLUDGE
HOLDING AND DECANTING TANKS
AIR
LANDFARM OR OFF SITE DISPOSAL
CLEAN EFFLUENT
PLATE OIL / WATER SEPARATOR
CAUSTIC
ACID
FILTRATE TO API UNIT
SLUDGE TO REUSE
BIO-SLUDGE SAMPLING POINT
API OIL / WATER SEPARATOR
CAUSTIC
ACID
NUTRIENT
TEMPORARY DEWATERING UNIT
SOLIDS
INTERNAL WATER REUSE
RECLAIMED OIL
OFF SITE INCINERATION
OILY SLUDGE
CLEAN PLANT STORMWATER
CLOSED PIPE
HYDRAULIC SPLITTER BOX
OILY SLUDGE
PLATE OIL / WATER SEPARATOR
NORMALLY CLOSED
DSN003
DSN-001 COMPOSITE SAMPLING POINT
STORM WATER
PROCESS WATER
DSN002 STORM WATER
PROCESS AREA STORM WATER
COOLING TOWER BLOWDOWN
ARTHUR KILL
DIFFUSER

PART I
GENERAL REQUIREMENTS:
NJPDES

A. General Requirements of all NJPDES Permits

1. Requirements Incorporated by Reference

a. The permittee shall comply with all conditions set forth in this permit and with all the applicable requirements incorporated into this permit by reference. The permittee is required to comply with the regulations, including those cited in paragraphs b. through e. following, which are in effect as of the effective date of the final permit.

b. General Conditions

Penalties for Violations	N.J.A.C. 7:14-8.1 et seq.
Incorporation by Reference	N.J.A.C. 7:14A-2.3
Toxic Pollutants	N.J.A.C. 7:14A-6.2(a)4i
Duty to Comply	N.J.A.C. 7:14A-6.2(a)1 & 4
Duty to Mitigate	N.J.A.C. 7:14A-6.2(a)5 & 11
Inspection and Entry	N.J.A.C. 7:14A-2.11(e)
Enforcement Action	N.J.A.C. 7:14A-2.9
Duty to Reapply	N.J.A.C. 7:14A-4.2(e)3
Signatory Requirements for Applications and Reports	N.J.A.C. 7:14A-4.9
Effect of Permit/Other Laws	N.J.A.C. 7:14A-6.2(a)6 & 7 & 2.9(c)
Severability	N.J.A.C. 7:14A-2.2
Administrative Continuation of Permits	N.J.A.C. 7:14A-2.8
Permit Actions	N.J.A.C. 7:14A-2.7(c)
Reopener Clause	N.J.A.C. 7:14A-6.2(a)10
Permit Duration and Renewal	N.J.A.C. 7:14A-2.7(a) & (b)
Consolidation of Permit Process	N.J.A.C. 7:14A-15.5
Confidentiality	N.J.A.C. 7:14A-18.2 & 2.11(g)
Fee Schedule	N.J.A.C. 7:14A-3.1
Treatment Works Approval	N.J.A.C. 7:14A-22 & 23

c. Operation And Maintenance

Need to Halt or Reduce not a Defense	N.J.A.C. 7:14A-2.9(b)
Proper Operation and Maintenance	N.J.A.C. 7:14A-6.12

d. Monitoring And Records

Monitoring	N.J.A.C. 7:14A-6.5
Recordkeeping	N.J.A.C. 7:14A-6.6
Signatory Requirements for Monitoring Reports	N.J.A.C. 7:14A-6.9

e. Reporting Requirements

Planned Changes	N.J.A.C. 7:14A-6.7
Reporting of Monitoring Results	N.J.A.C. 7:14A-6.8
Noncompliance Reporting	N.J.A.C. 7:14A-6.10 & 6.8(h)
Hotline/Two Hour & Twenty-four Hour Reporting	N.J.A.C. 7:14A-6.10(c) & (d)
Written Reporting	N.J.A.C. 7:14A-6.10(e) &(f) & 6.8(h)
Duty to Provide Information	N.J.A.C. 7:14A-2.11, 6.2(a)14 & 18.1
Schedules of Compliance	N.J.A.C. 7:14A-6.4
Transfer	N.J.A.C. 7:14A-6.2(a)8 & 16.2

PART II

GENERAL REQUIREMENTS: DISCHARGE CATEGORIES

A. Additional Requirements Incorporated By Reference

1. Requirements for Discharges to Surface Waters

a. In addition to conditions in Part I of this permit, the conditions in this section are applicable to activities at the permitted location and are incorporated by reference. The permittee is required to comply with the regulations which are in effect as of the effective date of the final permit.

i. Surface Water Quality Standards N.J.A.C. 7:9B-1

ii. Water Quality Management Planning Regulations N.J.A.C. 7:15

B. General Conditions

1. Scope

a. The issuance of this permit shall not be considered as a waiver of any applicable federal, state, and local rules, regulations and ordinances.

2. Permit Renewal Requirement

a. Permit conditions remain in effect and enforceable until and unless the permit is modified, renewed or revoked by the Department.

b. Submit a complete permit renewal application: 180 days before the Expiration Date.

3. Notification of Non-Compliance

a. The permittee shall notify the Department of all non-compliance when required in accordance with N.J.A.C. 7:14A-6.10 by contacting the DEP HOTLINE at 1-877-WARNDEP (1-877-927-6337).

b. The permittee shall submit a written report as required by N.J.A.C. 7:14A-6.10 within five days.

4. Notification of Changes

a. The permittee shall give written notification to the Department of any planned physical or operational alterations or additions to the permitted facility when the alteration is expected to result in a significant change in the permittee's discharge and/or residuals use or disposal practices including the cessation of discharge in accordance with N.J.A.C. 7:14A-6.7.

b. Prior to any change in ownership, the current permittee shall comply with the requirements of N.J.A.C. 7:14A-16.2, pertaining to the notification of change in ownership.

5. Access to Information

a. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to enter upon a person's premises, for purposes of inspection, and to access / copy any records that must be kept under the conditions of this permit.

6. Operator Certification

a. Pursuant to N.J.A.C. 7:10A-1.1 et seq. every wastewater system not exempt pursuant to N.J.A.C. 7:10A-1.1(b) requires a licensed operator. The operator of a system shall meet the Department's requirements pursuant to N.J.A.C. 7:10A-1.1 and any amendments. The name of the proposed operator, where required shall be submitted to the Department at the address below, in order that his/her qualifications may be determined prior to initiating operation of the treatment works.

i. Notifications shall be submitted to:
NJDEP
Examination and Licensing Unit
P.O. Box 417
Trenton, New Jersey 08625
(609)777-1012.

b. The permittee shall notify the Department of any changes in licensed operator within two weeks of the change.

7. Operation Restrictions

a. The operation of a waste treatment or disposal facility shall at no time create: (a) a discharge, except as authorized by the Department in the manner and location specified in Part III of this permit; (b) any discharge to the waters of the state or any standing or ponded condtion for water or waste, except as specifically authorized by a valid NJPDES permit.

8. Residuals Management

a. The permittee shall comply with land-based sludge management criteria and shall conform with the requirements for the management of residuals and grit and screenings under N.J.A.C. 7:14A-6.15(a), which includes:

i. Standards for the Use or Disposal of Residual, N.J.A.C. 7:14A-20;

ii. Section 405 of the Federal Act governing the disposal of sludge from treatment works treating domestic sewage;

iii. The Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Solid Waste Management Rules, N.J.A.C. 7:26;

iv. The Sludge Quality Assurance Regulations, N.J.A.C. 7:14C;

v. The Statewide Sludge Management Plan promulgated pursuant to the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq., and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq.; and

vi. The provisions concerning disposal of sewage sludge and septage in sanitary landfills set forth at N.J.S.A. 13:1E-42 and the Statewide Sludge Management Plan.

vii. Residual that is disposed in a municipal solid waste landfill unit shall meet the requirements in 40 CFR Part 258 and/or N.J.A.C. 7:26 concerning the quality of residual disposed in a municipal solid waste landfill unit. (That is, passes the Toxicity Characteristic Leaching Procedure and does not contain "free liquids" as defined at N.J.A.C. 7:14A-1.2.)

b. If any applicable standard for residual use or disposal is promulgated under section 405(d)of the Federal Act and Sections 4 and 6 of the State Act and that standard is more stringent than any limitation on the pollutant or practice in the permit, the Department may modify or revoke and reissue the permit to conform to the standard for residual use or disposal.

c. The permittee shall make provisions for storage, or some other approved alternative management strategy, for anticipated downtimes at a primary residual management alternative. The permittee shall not be permitted to store residual beyond the capacity of the structural treatment and storage components of the treatment works. N.J.A.C. 7:14A-20.8(a) and N.J.A.C. 7:26 provide for the temporary storage of residuals for periods not exceeding six months, provided such storage does not cause pollutants to enter surface or ground waters of the State. The storage of residual for more than six months is not authorized under this permit. However, this prohibition does not apply to residual that remains on the land for longer than six months when the person who prepares the residual demonstrates that the land on which the residual remains is not a surface disposal site or landfill. The demonstration shall explain why residual must remain on the land for longer than six months prior to final use or disposal, discuss the approximate time period during which the residual shall be used or disposed and provide documentation of ultimate residual management arrangements. Said demonstration shall be in writing, be kept on file by the person who prepares residual, and submitted to the Department upon request.

d. The permittee shall comply with the appropriate adopted District Solid Waste or Sludge Management Plan (which by definition in N.J.A.C. 7:14A-1.2 includes Generator Sludge Management Plans), unless otherwise specifically exempted by the Department.

e. The preparer must notify and provide information necessary to comply with the N.J.A.C. 7:14A-20 land application requirements to the person who applies bulk residual to the land. This shall include, but not be limited to, the applicable recordkeeping requirements and certification statements of 40 CFR 503.17 as referenced at N.J.A.C 7:14A-20.7(j).

f. The preparer who provides biosolids to another person who further prepares the biosolids for application to the land must provide this person with notification and information necessary to comply with the N.J.A.C. 7:14A-20 land application requirements.

g. Any person who prepares bulk residual in New Jersey that is applied to land in a State other than New Jersey shall comply with the requirement at N.J.A.C. 7:14A-20.7(b)1.ix to submit to the Department written proof of compliance with or satisfaction of all applicable statutes, regulations, and guidelines of the state in which land application will occur.

PART III
LIMITS AND MONITORING REQUIREMENTS

MONITORED LOCATION:	RECEIVING STREAM:	STREAM CLASSIFICATION:	DISCHARGE CATEGORY(IES):
001C Process Outfall	Arthur Kill	SE3(C2)	B - Industrial Wastewater

Location Description

Effluent sampling for all parameters shall be at the last sampling port after final treatment at DSN001C, which discharges into the Arthur Kill at Lat. 40d 33' 27.1" and Long. 74d 14' 32.8".

The sample point "Precipitation" refers to stormwater routed through the treatment plant. Effluent Net Value for parameters with stormwater allocation is calculated by subtracting the stormwater loading (Precipitation) from the measured effluent loading (Effluent Gross Value).

Contributing Waste Types

Cooling tower blowdown, Groundwater Remediation, Petro Ref ELG process H2O, Storm Water Runoff

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please refer to Part IV, Section G.2 for the calculation of net values for pollutants with stormwater allocation.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Duration Of Discharge	Precipitation	REPORT Monthly Total	*****	DAYS/MON	*****	*****	*****	*****	1/Month	Calculated
January thru December	QL	***	***		***	***	***			
Flow, In Conduit or Thru Treatment Plant	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	MGD	*****	*****	*****	*****	1/Month	Calculated
January thru December	QL	***	***		***	***	***			
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	MGD	*****	*****	*****	*****	Continuous	Metered
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	2/Month	Calculated
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please refer to Part IV, Section G.2 for the calculation of net values for pollutants with stormwater allocation.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
BOD, 5-Day (20 oC)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	30 Monthly Average	50 Daily Maximum	MG/L	2/Month	Composite
January thru December	QL	***	***		***	***	***			
BOD, 5-Day (20 oC)	Effluent Net Value	187 Monthly Average	338 Daily Maximum	KG/DAY	*****	*****	*****	*****	2/Month	Calculated
January thru December	QL	***	***		***	***	***			
pH	Effluent Gross Value	*****	*****	*****	6.0 Instant Minimum	*****	9.0 Instant Maximum	SU	2/Day	Grab
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	30 Monthly Average	50 Daily Maximum	MG/L	1/Week	Composite
January thru December	QL	***	***		***	***	***			
Solids, Total Suspended	Effluent Net Value	151 Monthly Average	234 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please refer to Part IV, Section G.2 for the calculation of net values for pollutants with stormwater allocation.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Oil & Grease Tot Rec Hexane Extraction	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	10 Monthly Average	15 Daily Maximum	MG/L	1/Week	Grab
January thru December	QL	***	***		***	***	***			
Oil & Grease Tot Rec Hexane Extraction	Effluent Net Value	54 Monthly Average	101 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Nitrogen, Ammonia Total (as N)	Effluent Gross Value	102 Monthly Average	225 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Composite
January thru December	QL	***	***		***	***	***			
LC50 Statre 96hr Acu Mysid Bahia	Effluent Gross Value	*****	*****	*****	REPORT Report Per Minimum	*****	*****	%EFFL	1/6 Months	Composite
January thru December	AL	***	***		50	***	***			
Temperature, oC	Effluent Gross Value	*****	*****	*****	*****	REPORT Monthly Average	35 Daily Maximum	DEG.C	2/Day	Grab
January thru December	QL	***	***		***	***	***			
Carbon, Tot Organic (TOC)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Carbon, Tot Organic (TOC)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	66 Monthly Average	110 Daily Maximum	MG/L	1/Week	Composite
January thru December	QL	***	***		***	***	***			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please refer to Part IV, Section G.2 for the calculation of net values for pollutants with stormwater allocation.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Carbon, Tot Organic (TOC)	Effluent Net Value	411 Monthly Average	743 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Sulfide, Total (as S)	Effluent Gross Value	0.98 Monthly Average	2.16 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Composite
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Composite
January thru December	QL	***	***		***	***	***			
Phenolics, Total Recoverable	Effluent Net Value	1.2 Monthly Average	2.52 Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Week	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Hexavalent (as Cr)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	UG/L	1/Month	Composite
January thru December	RQL	***	***		***	10	10			

Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Comments:

Please refer to Part IV, Section G.2 for the calculation of net values for pollutants with stormwater allocation.

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Chromium, Hexavalent (as Cr)	Effluent Net Value	0.14 Monthly Average	0.32 Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	UG/L	1/Month	Calculated
January thru December	RQL	***	***		***	10	10			
Chromium, Total (as Cr)	Precipitation	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	*****	*****	*****	1/Month	Calculated
January thru December	QL	***	***		***	***	***			
Chromium, Total (as Cr)	Effluent Gross Value	REPORT Monthly Average	REPORT Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	UG/L	1/Month	Composite
January thru December	RQL	***	***		***	10	10			
Chromium, Total (as Cr)	Effluent Net Value	1.71 Monthly Average	4.93 Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	UG/L	1/Month	Calculated
January thru December	RQL	***	***		***	10	10			
Nickel, Total Recoverable	Effluent Gross Value	2.3 Monthly Average	6.4 Daily Maximum	KG/DAY	*****	REPORT Monthly Average	REPORT Daily Maximum	UG/L	1/Month	Composite
January thru December	RQL	***	***		***	10	10			

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 2: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Manganese, Total Recoverable	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Cyanide, Total (as CN)	Effluent Gross Value	REPORT RQL = 40	UG/L	Grab	January thru December
Arsenic, Total Recoverable (as As)	Effluent Gross Value	REPORT RQL = 8	UG/L	24 Hour Composite	January thru December
Selenium, Total Recoverable	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Thallium, Total Recoverable	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Beryllium, Total Recoverable (as Be)	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Silver, Total Recoverable	Effluent Gross Value	REPORT RQL = 2	UG/L	24 Hour Composite	January thru December
Cadmium, Total Recoverable	Effluent Gross Value	REPORT RQL = 4	UG/L	24 Hour Composite	January thru December
Lead, Total Recoverable	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Copper, Total Recoverable	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Antimony, Total Recoverable	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Mercury Total Recoverable	Effluent Gross Value	REPORT RQL = 1	UG/L	24 Hour Composite	January thru December
Acenaphthylene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Acenaphthene	Effluent Gross Value	REPORT RQL = 9.5	UG/L	24 Hour Composite	January thru December
Anthracene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 2: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Benzo(b)fluoranthene (3,4-benzo)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Benzo(k)fluoranthene	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Benzo(a)pyrene	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Bis(2-chloroethyl) ether	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Bis(2-chloroethoxy) methane	Effluent Gross Value	REPORT RQL = 26.5	UG/L	24 Hour Composite	January thru December
Bis (2-chloroiso-propyl) ether	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Butyl benzyl phthalate	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Chrysene	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Diethyl phthalate	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Dimethyl phthalate	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
1,2-Diphenyl-hydrazine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Fluoranthene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Fluorene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Hexachlorocyclo-pentadiene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Hexachloroethane	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 2: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Indeno(1,2,3-cd)-pyrene	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Isophorone	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
N-nitrosodi-n-propylamine	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
N-nitrosodiphenyl-amine	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
N-nitrosodimethyl-amine	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Nitrobenzene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Phenanthrene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Pyrene	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Benzo(ghi)perylene	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Benzo(a)anthracene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
1,2-Dichlorobenzene	Effluent Gross Value	REPORT RQL = 9	UG/L	Grab	January thru December
1,2,4-Trichloro-benzene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Dibenzo(a,h) anthracene	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
1,3-Dichlorobenzene	Effluent Gross Value	REPORT RQL = 9	UG/L	Grab	January thru December
1,4-Dichlorobenzene	Effluent Gross Value	REPORT RQL = 20	UG/L	Grab	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 2: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
2-Chloronaphthalene	Effluent Gross Value	REPORT RQL = 9.5	UG/L	24 Hour Composite	January thru December
Di-n-octyl Phthalate	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
2,4-Dinitrotoluene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
2,6-Dinitrotoluene	Effluent Gross Value	REPORT RQL = 9.5	UG/L	24 Hour Composite	January thru December
3,3'-Dichloro-benzidine	Effluent Gross Value	REPORT RQL = 60	UG/L	24 Hour Composite	January thru December
4-Bromophenyl phenyl ether	Effluent Gross Value	REPORT RQL = 9.5	UG/L	24 Hour Composite	January thru December
Naphthalene	Effluent Gross Value	REPORT RQL = 8	UG/L	24 Hour Composite	January thru December
Bis(2-ethylhexyl) phthalate	Effluent Gross Value	REPORT RQL = 30	UG/L	24 Hour Composite	January thru December
Di-n-butyl phthalate	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
Benzidine	Effluent Gross Value	REPORT RQL = 50	UG/L	24 Hour Composite	January thru December
Malathion	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Demeton	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Hexachlorobenzene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Hexachlorobutadiene	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Mirex	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 2: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
1,3-Dichloropropene	Effluent Gross Value	REPORT RQL = 7	UG/L	Grab	January thru December
1,2,4,5-Tetrachloro-benzene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
N-nitrosodiethyl-amine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
N-nitrosopyrrolidine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Carbon Tetrachloride	Effluent Gross Value	REPORT RQL = 6	UG/L	Grab	January thru December
1,2-Dichloroethane	Effluent Gross Value	REPORT RQL = 3	UG/L	Grab	January thru December
Bromoform	Effluent Gross Value	REPORT RQL = 8	UG/L	Grab	January thru December
Chloroform	Effluent Gross Value	REPORT RQL = 5	UG/L	Grab	January thru December
Acrolein	Effluent Gross Value	REPORT RQL = 50	UG/L	Grab	January thru December
Acrylonitrile	Effluent Gross Value	REPORT RQL = 50	UG/L	Grab	January thru December
Chlorobenzene	Effluent Gross Value	REPORT RQL = 6	UG/L	Grab	January thru December
Chlorodibromomethane	Effluent Gross Value	REPORT RQL = 6	UG/L	Grab	January thru December
Methyl Bromide	Effluent Gross Value	REPORT RQL = 9	UG/L	Grab	January thru December
Methyl Chloride	Effluent Gross Value	REPORT RQL = 10	UG/L	Grab	January thru December
Methylene Chloride	Effluent Gross Value	REPORT RQL = 6	UG/L	Grab	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 2: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Tetrachloroethylene	Effluent Gross Value	REPORT RQL = 9	UG/L	Grab	January thru December
Trichlorofluoro- methane	Effluent Gross Value	REPORT RQL = 5	UG/L	Grab	January thru December
1,1-Dichloroethane	Effluent Gross Value	REPORT RQL = 23.5	UG/L	Grab	January thru December
1,1-Dichloroethylene	Effluent Gross Value	REPORT RQL = 6	UG/L	Grab	January thru December
1,1,1-Trichloro- ethane	Effluent Gross Value	REPORT RQL = 6	UG/L	Grab	January thru December
1,1,2-Trichloro- ethane	Effluent Gross Value	REPORT RQL = 6	UG/L	Grab	January thru December
1,1,2,2-Tetrachloro- ethane	Effluent Gross Value	REPORT RQL = 10	UG/L	Grab	January thru December
1,2-Dichloropropane	Effluent Gross Value	REPORT RQL = 5	UG/L	Grab	January thru December
1,2-trans-Dichloro- ethylene	Effluent Gross Value	REPORT RQL = 4	UG/L	Grab	January thru December
2-Chloroethyl Vinyl Ether (Mixed)	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Bromodichloromethane	Effluent Gross Value	REPORT RQL = 5	UG/L	Grab	January thru December
Vinyl Chloride	Effluent Gross Value	REPORT RQL = 10	UG/L	Grab	January thru December
Trichloroethylene	Effluent Gross Value	REPORT RQL = 5	UG/L	Grab	January thru December
Methoxychlor	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
N-Nitrosodi- n-butylamine	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 2: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Chloroethane	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Parachloro-m-cresol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Parathion	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Phenols	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
2,4,5-Trichloro-phenol	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Delta BHC, Total (ug/l)	Effluent Gross Value	REPORT RQL = 0.02	UG/L	24 Hour Composite	January thru December
Endosulfan Sulfate	Effluent Gross Value	REPORT RQL = 0.08	UG/L	24 Hour Composite	January thru December
Beta Endosulfan	Effluent Gross Value	REPORT RQL = 0.04	UG/L	24 Hour Composite	January thru December
Alpha Endosulfan	Effluent Gross Value	REPORT RQL = 0.02	UG/L	24 Hour Composite	January thru December
Endrin Aldehyde	Effluent Gross Value	REPORT RQL = 0.1	UG/L	24 Hour Composite	January thru December
2,3,7,8-Tetrachloro-dibenzo-p-dioxin	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
4,4'-DDT(p,p'-DDT)	Effluent Gross Value	REPORT RQL = 0.06	UG/L	24 Hour Composite	January thru December
4,4'-DDD(p,p'-DDD)	Effluent Gross Value	REPORT RQL = 0.04	UG/L	24 Hour Composite	January thru December
4,4'-DDE(p,p'-DDE)	Effluent Gross Value	REPORT RQL = 0.04	UG/L	24 Hour Composite	January thru December
Aldrin	Effluent Gross Value	REPORT RQL = 0.04	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 2: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Alpha BHC	Effluent Gross Value	REPORT RQL = 0.02	UG/L	24 Hour Composite	January thru December
Beta BHC	Effluent Gross Value	REPORT RQL = 0.04	UG/L	24 Hour Composite	January thru December
Gamma BHC (lindane),	Effluent Gross Value	REPORT RQL = 0.03	UG/L	24 Hour Composite	January thru December
Chlordane	Effluent Gross Value	REPORT RQL = 0.2	UG/L	24 Hour Composite	January thru December
Dieldrin	Effluent Gross Value	REPORT RQL = 0.03	UG/L	24 Hour Composite	January thru December
Endosulfans, Total (alpha and beta)	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Endrin	Effluent Gross Value	REPORT RQL = 0.04	UG/L	24 Hour Composite	January thru December
Toxaphene	Effluent Gross Value	REPORT RQL = 1	UG/L	24 Hour Composite	January thru December
Heptachlor	Effluent Gross Value	REPORT RQL = 0.02	UG/L	24 Hour Composite	January thru December
Heptachlor Epoxide	Effluent Gross Value	REPORT RQL = 0.4	UG/L	24 Hour Composite	January thru December
Chlorpyrifos	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
2-Chlorophenol	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
2-Nitrophenol	Effluent Gross Value	REPORT RQL = 18	UG/L	24 Hour Composite	January thru December
2,4-Dichlorophenol	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
2,4-Dimethylphenol	Effluent Gross Value	REPORT RQL = 13.5	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Annual Reporting Requirements:

Submit an Annual WCR: within twenty-five days after the end of every 12 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 2: Surface Water WCR - Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
2,4-Dinitrophenol	Effluent Gross Value	REPORT RQL = 40	UG/L	24 Hour Composite	January thru December
2,4,6-Trichloro- phenol	Effluent Gross Value	REPORT RQL = 20	UG/L	24 Hour Composite	January thru December
4-Chlorophenyl phenyl ether	Effluent Gross Value	REPORT RQL = 21	UG/L	24 Hour Composite	January thru December
4-Nitrophenol	Effluent Gross Value	REPORT RQL = 12	UG/L	24 Hour Composite	January thru December
4,6-Dinitro-o-cresol	Effluent Gross Value	REPORT RQL = 60	UG/L	24 Hour Composite	January thru December
Phenol Single Compound	Effluent Gross Value	REPORT RQL = 10	UG/L	24 Hour Composite	January thru December
Pentachlorophenol	Effluent Gross Value	REPORT RQL = 30	UG/L	24 Hour Composite	January thru December
Pentachlorobenzene	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December
Guthion	Effluent Gross Value	REPORT	UG/L	24 Hour Composite	January thru December

Surface Water WCR - Semi Annual Reporting Requirements:

Submit a Semi-Annual WCR: within twenty-five days after the end of every 6 month monitoring period beginning from the effective date of the permit (EDP).

Table III - A - 3: Surface Water WCR - Semi Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Zinc, Total Recoverable	Effluent Gross Value	REPORT RQL = 30	UG/L	24 Hour Composite	January thru December
Methyl tert-butyl Ether	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Toluene	Effluent Gross Value	REPORT RQL = 6	UG/L	Grab	January thru December
Benzene	Effluent Gross Value	REPORT RQL = 7	UG/L	Grab	January thru December
Ethylbenzene	Effluent Gross Value	REPORT RQL = 6	UG/L	Grab	January thru December
Xylenes (Total)	Effluent Gross Value	REPORT	UG/L	Grab	January thru December
Tertiary Butyl Alcohol (TBA)	Effluent Gross Value	REPORT	UG/L	Grab	January thru December

MONITORED LOCATION: SI6A Sludge Dewatering Tanks

DISCHARGE CATEGORY(IES): B - Industrial Wastewater

Location Description

Annually, a representative sample of the thickened sludge removed for use or disposal shall be obtained and analyzed pursuant to the Sludge Quality Assurance Regulations (SQAR, N.J.A.C. 7:14C).

Contributing Waste Types

Ind Residual-Other

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Nitrate Nitrogen, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Nitrogen, Kjeldahl Total, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Nitrogen, Ammonia Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Sulfide, Total (as S)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Magnesium Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Barium, Total (as Ba)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Boron, Total (as B)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Manganese, Total (as Mn)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Vanadium, Total (as V)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Titanium, Total (as Ti)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Molybdenum Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Phosphorus Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Arsenic, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Cobalt, Total (as Co)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Silver, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Antimony, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Aluminum, Total (as Al)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Selenium, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Thallium, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Copper, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Beryllium Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Cadmium, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Zinc, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Lead, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Nickel, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Mercury, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Chromium, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Iron, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Acenaphthylene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Acenaphthene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Anthracene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Benzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Benzo(k)fluoranthene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Benzo(a)pyrene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Bis(2-chloroethyl) ether, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Bis(2-chloroethoxy)-methane, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Bis(2-chloroiso-propyl)-ether,Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Butyl benzyl-phthalate, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Chrysene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Diethyl phthalate, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Dimethyl phthalate, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,2-Diphenyl-hydrazine, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Fluoranthene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Fluorene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Hexachlorocyclo-pentadiene, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Hexachloroethane, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Indeno(1,2,3-cd)-pyrene, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
N-nitrosodi-n-propylamine, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
N-nitrosodi-phenylamine, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Naphthalene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Nitrobenzene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Phenanthrene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Pyrene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Benzo(ghi)perylene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Benzo(a)anthracene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,2-Dichlorobenzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,2,4-Trichloro-benzene, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Dibenzo(a,h) anthracene, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,3-Dichlorobenzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,4-Dichlorobenzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
2-Chloronaphthalene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Di-n-octyl Phthalate Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
2,4-Dinitrotoluene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
2,6-Dinitrotoluene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
3,3'-Dichloro-benzidine, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
4-Bromophenyl phenyl ether, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Bis(2-ethylhexyl) phthalate, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Di-n-butyl phthalate Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Benzidine Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Hexachlorobenzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Hexachlorobutadiene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
trans-1,3-Dichloro-propene, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
3,4 Benzo-fluoranthene	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Methyl tert-butyl Ether	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Acrolein, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Acrylonitrile Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Bromoform Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Carbon Tetrachloride Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Chlorobenzene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Chlorodibromomethane Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Chloroethane Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Chloroform Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Dichlorobromomethane Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Ethylbenzene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Methyl Bromide, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Methyl Chloride, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Methylene Chloride, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Tetrachloroethylene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Toluene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Trichloroethylene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Vinyl Chloride Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,1-Dichloroethane, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,1-Dichloroethylene Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,1,1-Trichloro-ethane, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,1,2-Trichloro-ethane, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
1,1,2,2-Tetrachloro-ethane	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,2-Dichloroethane, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,2-Dichloropropane, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
1,2-trans-Dichloro ethylene, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
2-Chloroethyl Vinyl Ether, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Xylene, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Tertiary Butyl Alcohol (TBA)	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals DMR Reporting Requirements:

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

Table III - B - 1: Residuals DMR Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Cyanide, Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Isophorone Dry Weight	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Phenol, Single Compound, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
4-Chlorophenyl pheny lether, Dry Wt	Industrial Residuals	*****	*****	*****	*****	REPORT Monthly Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

Residuals WCR - Annual Reporting Requirements:

Submit an Annual WCR: due 60 calendar days after the end of each calendar year.

Table III - B - 3: Residuals WCR - Annual Limits and Monitoring Requirements

PHASE: Final **PHASE Start Date:** **PHASE End Date:**

Parameter	Sample Point	Compliance Quantity	Units	Sample Type	Monitoring Period
Amt Sludge Rmvd, Wet Cubic Yards	Industrial Residuals	REPORT	WCY/YR	Calculated	January thru December
Amt Sludge Rmvd, Wet Metric Tons	Industrial Residuals	REPORT	WMT/YR	Calculated	January thru December
Amt Sludge Rmvd, Gallons	Industrial Residuals	REPORT	GAL/YEAR	Calculated	January thru December
Total Amount of Sludge Removed	Industrial Residuals	REPORT	DMT/YR	Calculated	January thru December
Solids, Total	Industrial Residuals	REPORT	%TS	Composite	January thru December

Residuals Transfer Reporting Requirements:

Submit an Annual RTR: due 60 calendar days after the end of each calendar year.

PART IV

SPECIFIC REQUIREMENTS: NARRATIVE

Industrial Wastewater

A. MONITORING REQUIREMENTS

1. Standard Monitoring Requirements

a. Each analysis required by this permit shall be performed by a New Jersey Certified Laboratory that is certified to perform that analysis.

b. The Permittee shall perform all water/wastewater analyses in accordance with the analytical test procedures specified in 40 CFR 136 unless other test procedures have been approved by the Department in writing or as otherwise specified in the permit.

c. The permittee shall utilize analytical methods that will ensure compliance with the Quantification Levels (QLs) listed in PART III. QLs include, but are not limited to, Recommended Quantification Levels (RQLs) and Method Detection Levels (MDLs). If the permittee and/or contract laboratory determines that the QLs achieved for any pollutant(s) generally will not be as sensitive as the QLs specified in PART III, the permittee must submit a justification of such to the Bureau of Surface Water Permitting. For limited parameters with no QL specified, the sample analysis shall use a detection level at least as sensitive as the effluent limit.

d. All sampling shall be conducted in accordance with the Department's Field Sampling Procedures Manual, or an alternate method approved by the Department in writing.

e. All monitoring shall be conducted as specified in Part III.

f. All sample frequencies expressed in Part III are minimum requirements. Any additional samples taken consistent with the monitoring and reporting requirements contained herein shall be reported on the Monitoring Report Forms.

g. Annual and semi-annual wastewater testing shall be conducted in a different quarter of each year so that tests are conducted in each of the four permit quarters of the permit cycle. Testing may be conducted during any month of the permit quarters.

h. Monitoring for Wastewater Characterization Report parameters shall be conducted concurrently with the Whole Effluent Toxicity (WET) monitoring, when feasible.

i. The permittee shall perform all residual analyses in accordance with the analytical test procedures specified in 40 CFR 503.8 and the Sludge Quality Assurance Regulations (N.J.A.C. 7:14C) unless other test procedures have been approved by the Department in writing or as otherwise specified in the permit.

j. Effluent flow shall be measured using a flow meter. Additionally, for the purposes of calculating stormwater credit provided by the ELGs at 40 CFR 419 for certain pollutants in contaminated stormwater treated at the wastewater treatment plant, stormwater flow shall be measured on days that treatment for this flow coincides with sampling for a pollutant with stormwater credit. This procedure is further explained in Section G.2.

B. RECORDKEEPING

1. Standard Recordkeeping Requirements

a. The permittee shall retain records of all monitoring information, including 1) all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation (if applicable), 2) copies of all reports required by this NJPDES permit, 3) all data used to complete the application for a NJPDES permit, and 4) monitoring information required by the permit related to the permittee's residual use and/or disposal practices, for a period of at least 5 years, or longer as required by N.J.A.C. 7:14A-20, from the date of the sample, measurement, report, application or record.

b. Records of monitoring information shall include 1) the date, locations, and time of sampling or measurements, 2) the individual(s) who performed the sampling or measurements, 3) the date(s) the analyses were performed, 4) the individual(s) who performed the analyses, 5) the analytical techniques or methods used, and 6) the results of such analyses.

C. REPORTING

1. Standard Reporting Requirements

a. The permittee shall submit all required monitoring results to the Department on the forms provided to them. The Monitoring Report Forms (MRFs) may be provided to the permittee in either a paper format or in an electronic file format. Unless otherwise noted, all requirements below pertain to both paper and electronic formats.

b. Any MRFs in paper format shall be submitted to the following addresses:

i. New Jersey Department of Environment Protection
Mail Code 401-02B
Division of Water Quality
Office of Permit Management
P.O. Box 420
Trenton, New Jersey 08625-0420.

ii. (if requested by the Water Compliance and Enforcement Bureau)
NJDEP: Central Bureau of Water Compliance and Enforcement
Mail Code 44-03
P.O. Box 420
Trenton, New Jersey 08625-0420.

c. Any electronic data submission shall be in accordance with the guidelines and provisions outlined in the Department's Electronic Data Interchange (EDI) agreement with the permittee. Paper copies must be available for on-site inspection by DEP personnel or provided to the DEP upon written request.

d. All monitoring report forms shall be certified by the highest ranking official having day-to-day managerial and operational responsibilities for the discharging facility.

e. The highest ranking official may delegate responsibility to certify the monitoring report forms in his or her absence. Authorizations for other individuals to sign shall be made in accordance with N.J.A.C. 7:14A-4.9(b).

f. Monitoring results shall be submitted in accordance with the current Discharge Monitoring Report Manual and any updates thereof.

g. If monitoring for a parameter is not required in a monitoring period, the permittee must report "CODE=N" for that parameter.

D. SUBMITTALS

1. Standard Submittal Requirements

a. The permittee shall amend the Operation & Maintenance Manual whenever there is a change in the treatment works design, construction, operations or maintenance which substantially changes the treatment works operations and maintenance procedures.

b. The permittee has completed sampling for PCBs as required in a previous permit action. The Department is currently reviewing the sampling data for this and other facilities to determine which facilities are discharging at more elevated levels. Once the Department completes this review and if the permittee's effluent is discharging PCBs at more elevated levels, the Department will require the permittee to develop and submit a PMP for approval within 12 months from the effective date of the permit action the requirement is incorporated in.

i. If, based on the review of the Final Report, the Department determines that a PMP is required, the permittee shall prepare and submit a PMP to the Department by the date specified in the Department's determination letter.

ii. The permittee shall implement the PMP within 30 days after written notification by the Department that the PMP is complete.

iii. The PMP shall be developed to achieve maximum practical reduction in accordance with the PMP Technical Manual.

c. PCB PMP Annual Report Requirement.

i. The permittee shall submit an annual report in accordance with the Annual Report Guidance Document every 12 months from the implementation of the PMP.

ii. Any revisions to the PMP as a result of the ongoing work shall be reported in the annual report.

iii. The annual report shall contain, at a minimum, a detailed discussion of the specific progress and actions taken by the permittee during the previous twelve month period that addresses PCB loadings and implementation of the PMP.

E. FACILITY MANAGEMENT

1. Discharge Requirements

a. The permittee shall discharge at the location(s) specified in PART III of this permit.

b. The permittee shall not discharge foam or cause foaming of the receiving water that: 1) Forms objectionable deposits on the receiving water, 2) Forms floating masses producing a nuisance, or 3) Interferes with a designated use of the waterbody.

c. The permittee's discharge shall not produce objectionable color or odor in the receiving stream.

d. The discharge shall not exhibit a visible sheen.

e. When quantification levels (QL) and effluent limits are both specified for a given parameter in Part III, and the QL is less stringent than the effluent limit, effluent compliance will be determined by comparing the reported value against the QL.

f. The Permittee is authorized to use the following corrosion inhibitors, biocides, or other cooling water additives: Sulfuric Acid, Nalco 3DT-191, Nalco 3DT-199, Nalco 3DT-192, Nalco 3DT-184, Stabrex ST70, Nalco 7330, Optimer 7128, Nalco-8365, Nalco-23101, Nalco-7384, Nalco-7308, Sodium Hypochlorite, Inhibited Hydrochloric Acid, Soda Ash, Nalco-73282, Nalco-73286, Nalco-73281, Nalco-73199, Nalco-73550, Nalprep 2578, Nalprep 8349, EC9078A, Nalco Core Shell 71301, Nalco Core Shell 71303, Nalco 3DT197, Caustic, Nalco 2584, T 1826, Nalco 1720, Hydrogen Peroxide, Nalco 22310, and Nalco 7290E.

The use of any new additives other than the ones listed above requires Departmental approval. A request for the use of new additives shall be in the form of an advanced notification consisting of all relevant information, including the Material Safety Data Sheets, the nature of the active constituents, and aquatic toxicity data. The Department shall process the request for approval to use the new additives in an expeditious manner and follow up with a written response. If the new additives are chemically similar in nature, the permittee shall only be required to notify the Bureau of Surface Water Permitting prior to their use. However, if the new additives are chemically different in nature, the permittee shall notify this Bureau at least 180 days prior to use so that the permit may be reopened to incorporate any additional limitations and/or monitoring requirements deemed necessary.

2. Interstate Environmental Commission

a. The permittee shall comply with the Interstate Environmental Commission's (IEC) "Water Quality Regulations." Although no monitoring requirements specific to the IEC are included in this permit, compliance may be determined by the IEC based on its own sampling events. IEC effluent requirements shall not be considered effluent limitations for the purpose of mandatory penalties under N.J.S.A. 58:10A-10.1.

3. Applicability of Discharge Limitations and Effective Dates

a. Surface Water Discharge Monitoring Report (DMR) Form Requirements

i. The final effluent limitations and monitoring conditions contained in PART III for DSN 001C apply for the full term of this permit action.

b. Wastewater Characterization Report (WCR) Form Requirements

i. The final effluent monitoring conditions contained in PART III for DSN 001C apply for the full term of this permit action.

4. Operation, Maintenance and Emergency conditions

a. The permittee shall operate and maintain treatment works and facilities which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit as specified in the Operation & Maintenance Manual.

b. The permittee shall develop emergency procedures to ensure effective operation of the treatment works under emergency conditions in accordance with NJAC 7:14A-6.12(d).

5. Toxicity Testing Requirements - Acute Whole Effluent Toxicity

a. Part III of this permit contains an Action Level (AL) for Acute Whole Effluent Toxicity. Toxicity Reduction and Implementation Requirements (TRIR) may be triggered based on exceedences of theis AL. See TRIR section below for more details.

b. The permittee shall conduct toxicity tests on its wastewater discharge in accordance with the provisions in this section. Such testing will determine if appropriately selected effluent concentrations adversely affect the test species.

c. Acute toxicity tests shall be conducted using the test species and method identified in Part III of this permit.

d. Any test that does not meet the specifications of N.J.A.C. 7:18, laboratory certification regulations, must be repeated within 30 days of the completion of the initial test. The repeat test shall not replace subsequent testing required in Part III.

e. The permittee shall collect and analyze the concentration of ammonia-N in the effluent on the day a sample is collected for WET testing. This result is to be reported on the Biomonitoring Report Form.

f. The permittee shall resubmit an Acute Methodology Questionnaire within 60 days of any change in laboratory.

g. Submit an acute whole effluent toxicity test report: within twenty-five days after the end of every 6 month monitoring period beginning from the effective date of the permit (EDP). The permittee shall submit toxicity test results on appropriate forms.

h. Test reports shall be submitted to:

i. New Jersey Department of Environmental Protection
Mail Code 401-02B
Division of Water Quality
Bureau of Surface Water Permitting
P.O. Box 420
Trenton, New Jersey 08625-0420.

6. Toxicity Reduction Implementation Requirements (TRIR)

a. The permittee shall initiate a tiered toxicity investigation if two out of six consecutive WET tests demonstrate that the effluent does not comply or will not comply with the action level specified in Part III of this permit.

i. If the exceedence of the action level is directly caused by a documented facility upset, or other unusual event which has been identified and appropriately remedied by the permittee, the toxicity test data collected during the event may be eliminated when determining the need for initiating a TRIR upon written Department approval.

b. The permittee shall begin toxicity characterization within 30 days of the end of the monitoring period when the second toxicity test exceeds the action level in Part III. The monitoring frequency for toxicity testing shall be increased to monthly. Up to 12 additional tests may be required.

i. The permittee may return to the toxicity testing frequency specified in Part III if four consecutive toxicity tests conducted during the Toxicity Characterization do not exceed the action level.

ii. If two out of any six consecutive, acceptable tests again exceed the action level in Part III, the permittee shall repeat the TRIR.

c. The permittee shall initiate a Preliminary Toxicity Identification (PTI) upon the third exceedence of the action level specified in Part III during toxicity characterization.

i. The permittee may return to the monitoring frequency specified in PART III while conducting the PTI. If more frequent WET testing is performed during the PTI, the permittee shall submit all biomonitoring reports to the DEP and report the results for the most sensitive species on the DMR.

ii. As appropriate, the PTI shall include:
(1) treatment plant performance evaluation,
(2) pretreatment program information,
(3) evaluation of ammonia and chlorine produced oxidants levels and their effect on the toxicity of the discharge,
(4) evaluation of chemical use and processes at the facility, and
(5) an evaluation of incidental facility procedures such as floor washing, and chemical spill disposal which may contribute to effluent toxicity.

iii. If the permittee demonstrates that the cause of toxicity is the chlorine added for disinfection or the ammonia concentration in the effluent and the chlorine and/or ammonia concentrations are below the established water quality based effluent limitation for chlorine and/or ammonia, the permittee shall identify the procedures to be used in future toxicity tests to account for chlorine and/or ammonia toxicity in their preliminary toxicity identification report.

iv. The permittee shall submit a PTI Notification within 15 months of triggering TRIR. This notification shall include a determination that the permittee intends to demonstrate compliance OR plans to initiate a Comprehensive Toxicity Investigation (CTI).

d. The permittee must demonstrate compliance with the action level in four consecutive WET tests to satisfy the TRIR. After successful completion, the permittee may return to the WET monitoring frequency specified in PART III.

e. The permittee shall initiate a CTI if the PTI does not identify the cause of toxicity and a demonstration of consistent compliance with the action level in Part III can not be made.

i. The permittee shall develop a project study plan identifying the party or parties responsible for conducting the comprehensive evaluation, establish a schedule for completing the study, and a description of the technical approach to be utilized.

ii. If the permittee determines that the PTI has failed to demonstrate consistent compliance with the action level in Part III , a CTI Workplan must be prepared and submitted within 90 days.

iii. The permittee shall summarize the data collected and the actions taken in CTI Quarterly Reports. The reports shall be submitted within 30 calendar days after the end of each quarter.

iv. The permittee shall submit a Final CTI Report 90 calendar days after the last quarterly report. The final CTI report shall include the corrective actions identified to reduce toxicity and a schedule for implementing these corrective actions.

f. Upon receipt of written approval from the Department of the corrective action schedule, the permittee shall implement those corrective actions consistent with that schedule.

i. The permittee shall satisfy the requirements of the TRIR and return to the original toxicity monitoring frequency after corrective actions are implemented and the permittee demonstrates consistent compliance with the action level in Part III in four consecutive toxicity tests.

ii. If the implemented corrective measures do not result in consistent compliance with the action level in Part III, the permittee shall submit a plan for resuming the CTI.

F. CONDITIONS FOR MODIFICATION

1. Notification requirements

a. The permittee may request a minor modification for a reduction in monitoring frequency for a non-limited parameter when four consecutive test results of "not detected" have occurred using the specified QL.

2. Causes for modification

a. The Department may modify or revoke and reissue any permit to incorporate 1) any applicable effluent standard or any effluent limitation, including any effluent standards or effluent limitations to control the discharge of toxic pollutants or pollutant parameters such as acute or chronic whole effluent toxicity and chemical specific toxic parameters, 2) toxicity reduction requirements, or 3) the implementation of a TMDL or watershed management plan adopted in accordance with N.J.A.C. 7:15-7.

b. The permittee may request a minor modification to eliminate the monitoring requirements associated with a discharge authorized by this permit when the discharge ceases due to changes at the facility.

G. Custom Requirement

1. Wastewater From Other Facilities

a. The treatment plant also receives petroleum-contaminated water from petroleum refining, storage, and distribution activities from other Hess and/or non-Hess owned facilities as well as water from petroleum contaminated groundwater remediation sites.

2. Calculations for Treated Stormwater Credit

a. The ELGs at 40 CFR 419 provide credit for the pollutants BOD5, TSS, Oil and Grease, Total Recoverable Phenolics, Total Chromium, Hexavalent Chromium and COD in contaminated stormwater which may be discharged after the application of the appropriate BCT or BAT levels of treatment.

As authorized by 40 CFR Part 419.23(f) and 40 CFR Part 419.24(e), if contaminated stormwater is commingled or treated with process wastewater, the quantity of pollutants discharged shall not exceed the quantity determined by multiplying the flow of contaminated runoff times the Effluent Limitation Factors listed below.

i. CFmax (kg/m3):

BOD5 - 0.048
TSS - 0.033
Oil & Grease - 0.015
TOC - 0.106 (0.048 x 2.2)
Total Phenols - 0.00035
Total Chromium - 0.00060
Hexavalent Chromium - 0.000062

CFavg (kg/m3):

BOD5 - 0.026
TSS - 0.021
Oil & Grease - 0.008
TOC - 0.057 (0.026 x 2.2)
Total Phenols - 0.00017
Total Chromium - 0.00021
Hexavalent Chromium - 0.000028.

b. Stormwater credit is provided using the following equations to calculate the reported mass discharge rate for these pollutants:

Mc = Mm - (CFmax) (SW)
Ar = Am - (CFavg) (SWavg)
where:
Mm = Measured maximum mass discharge rate (kg/day)
CFmax = Correction factor for maximum limit (kg/m3)
SW = Stormwater flow (m3/day) treated at the wastewater treatment plant on the day of sampling for parameters with stormwater credit.
Mc = Maximum mass discharge rate (kg/day) calculated using the equation above to provide credit for treated stormwater.
Am = Monthly average mass discharge rate (kg/day), computed as the sum of Mm values in the reporting period/number of days sampled for that specified monitoring period.
CFavg = Correction factor for monthly average limit
SWavg = Monthly average stormwater flow (m3/day) is the sum of stormwater values for days when treatment of contaminated stormwater coincides with sampling for the parameters with stormwater credit, divided by the number of such days.
Ar = Reported monthly average mass discharge rate (kg/day) calculated using the equation above to provide credit for treated stormwater.

Please note that, for the purposes of this calculation, the permittee must convert the stormwater flow from MGD to m3/day.

c. The amount of stormwater flow (m3/day) routed through the treatment plant shall be reported on the DMR under the parameter "Flow" and the sample point "Precipitation". The associated stormwater loadings for the pollutants with stormwater credit shall be calculated using the procedure described in section G.2.a above and reported on the DMR under the sample point "Precipitation". Effluent loading values based on measured concentration shall be reported under the sample point "Effluent Gross Value". And, effluent compliance for these parameters shall be determined at the sample point "Effluent Net Value", which is Effluent Gross Value - Effluent Precipitation Value.

For monthly average calculations, the number of days in a month shall be the number of days sampled during the month, or for stormwater calculations, the number of days where sampling coincides with stormwater treatment (n), not the actual number of days in the month. Thus, for parameter specific monthly average stormwater calculations, the amount of stormwater treated on sampling days for that parameter shall be used to determine the total stormwater flow for the month, where zero shall be used when stormwater treatment does not coincide with a sampling day. The monthly average stormwater flow is a function of the total sampling day stormwater flow (sigma m3) divided by the number of days when sampling and stormwater treatment coincided (sigma m3/n).